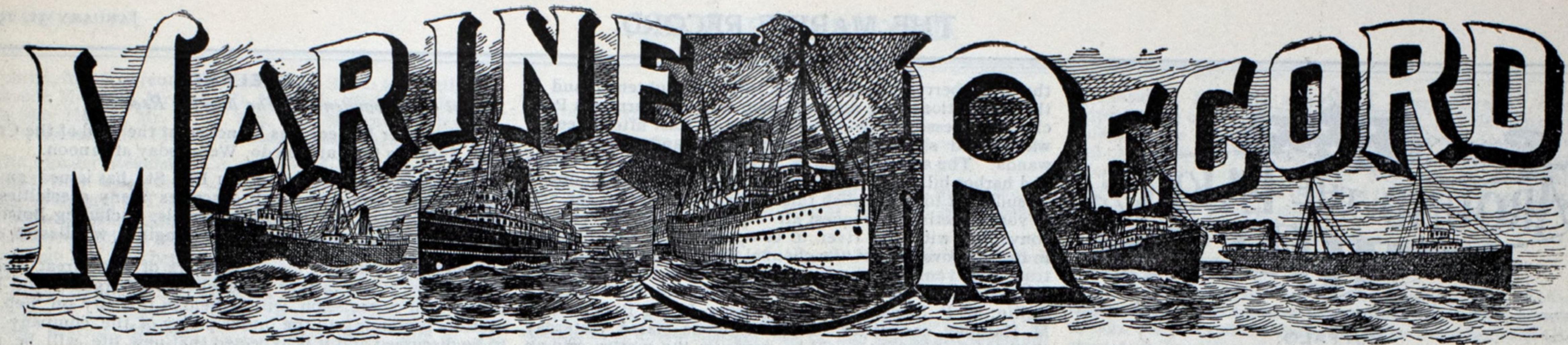


MARINE RECORD



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THE LIGHT-HOUSE SERVICE.

In its care of the navigators on the Great Lakes the federal government maintains 435 light-houses and lights on piers, it furnishes coal to blow 74 steam fog whistles, besides 18 fog signals operated by clockwork. Of the gas buoys there are 54 and of bell buoys 4. Ten light vessels in all, with crews aboard, add to the aids to navigation of the Great Lakes. These details are given in the annual report of the Light-House Board, just issued from Washington.

To maintain such a vast system requires four light-house tenders, which are comfortable steamers, and an aggregate force of over 1,000 men. The cost to the government for the construction of light-houses, light-ships and buoys will reach over \$5,000,000, and the amount is being added to constantly, for the demands of navigators for new lights and new fog signals have grown steadily with the development of lake transportation.

It is claimed by vessel owners that the wrecks prevented by every needed light or fog signal would recoup the government for the expense in a single season. The government spends the people's money, the vesselmen allege, only to give it back to the people in lower freight rates, for every item lessening the dangers of transportation lessens to the same degree insurance rates, transportation charges being ultimately based on its cost. What decreases insurance cuts down freights.

The use of 54 gas buoys on the Great Lakes represents a heavy outlay, for these buoys cost about \$3,000 each. They are filled with Pinstch gas, and burn continuously day and night for six months. They have proved extremely valuable in dangerous channels, as they fix the danger spots in a way that cannot be mistaken. They have proved far more valuable than the bell buoy, in such general use on the sea-coast.

The light-house service on the lakes, the report of the Light-House Board says, is in a highly satisfactory condition. For Lake Michigan the only complaint is against the condition of the light-keeper's house at South Chicago, and a new residence, to cost \$7,500, is recommended. Nearly all the light-houses have been painted white, with red roofs, in order to make them more easily visible in hazy weather when there is not enough fog to justify blowing the steam fog signals.

VESSELS WARNED OF DANGER BY ETHERIC WAVES.

United States Consul Dudley, at Vancouver, reports to the State Department regarding wrecking of vessels navigating the coast of British Columbia and Alaska. He remarks that he has heard complaints from mariners engaged in northern trade that the coasts north of Vancouver are not properly lighted, and that the waters to the northward have not been as fully sounded as safety to vessels requires.

Consul Dudley also encloses a description of an invention for warning vessels which says:

"It will interest those whose calling takes them into these waters to learn that an invention is now being investigated by the marine authorities and navigators at Southend-on-Sea, which, if it may not go a long way toward making lighthouses obsolete and unnecessary, is expected to be of much value in the prevention of shipwreck from any one of 90 per cent. of the usual causes. This is an automatic system of signaling which will warn ships of their approach to dangerous rocks and coasts in all weathers, when even a flashing light might not be seen and the booming of a fog-horn be unheard."

"A metallic conductor is fixed on an elevation ashore, or a lightship or reef or lighthouse. From this etheric waves are transmitted over a zone which has a radius of seven

miles. All vessels within this area which are fitted with receivers are warned of their proximity to danger, the distance of the point of the compass being registered. At the same time a bell rings and the receiving instrument records the name of the place that is being approached. The automatic part of the invention consists of steel bearings with a number of teeth which pass over a Morse transmitter. No operators are needed. The instrument or machine works absolutely automatically. In its elementary principles, the system resembles Marconi's method of wireless telegraphy, but in detail the system is essentially different.

"The committee of investigation at Southend-on-Sea has enthusiastically indorsed the invention after submitting it to a variety of tests in both foul and fair weather, and a syndicate is now being formed to engage in its manufacture on a large scale, the inventor stipulating that the price shall be maintained a modern one, he himself preferring to be remembered as a philanthropist rather than as a millionaire inventor."

DECISION AGAINST CHICAGO DRAINAGE CANAL.

The United States Supreme Court has rendered an opinion in the case of the Chicago drainage canal, overruling the demurrers filed in the case by the State of Illinois and the Chicago Drainage Canal District Board.

The proceedings were brought by the State of Missouri against the State of Illinois and the Drainage Board, the end sought being to prevent the use of the canal because of its supposed pollution of the drinking water of St. Louis. The effect of the decision is to sustain the contention of the State of Missouri. The opinion was handed down by Justice Shiras. The chief justice and Justices Harlan and White united in a dissenting opinion.

THE HEAVENS IN FEBRUARY.

Astronomical data for February, 1901, furnished by the Washburn observatory:

Two planets of those visible to the naked eye are seen in the evening sky the present month. One is Mercury which is an evening star setting soon after the sun and reaching greatest elongation east on Feb. 19th, at or near which date it may be observed. The other is the red planet Mars, which shines among the bright stars of the constellation Leo, high in the eastern sky and reaches the meridian near midnight during the latter part of the month. The morning sky is illuminated by three bright planets. First in the order of rising is Jupiter, which appears over the southeast horizon in the early morning. This is followed by Saturn over the same point of the horizon, and still later by Venus which runs nearer the position of the sun. Venus is the morning star proper and is steadily approaching the sun.

The times of sunrise and sunset at Milwaukee for the month are as follows:

	SUNRISE.	SUNSET.
Feb. 1.....	7:08.....	5:03.....
Feb. 11.....	6:56.....	5:17.....
Feb. 21.....	6:42.....	5:30.....
Feb. 28.....	6:30.....	5:39.....

The times of the moon's phases are:

Full moon.....	Feb. 3, 9:30 a. m.
Third quarter.....	Feb. 11, 12:12 p. m.
New Moon.....	Feb. 18, 8:45 p. m.
First quarter.....	Feb. 25, 12:38 p. m.

The principal fixed stars visible during the month in the evening hours are:

To the west, Capella, Aldebaran, the Pleiades. Near the meridian, the bright stars of the constellation Orion and Sirius. To the east, Procyon, Regulus, and Castor and Pollux.

LARGE BRITISH FLEETS.

We are indebted to the Liverpool Journal of Commerce, for the interesting annual compilation of British steamship companies, showing the number of vessels each company owns, and the gross tonnage of the ships in service and building: Messrs. Elder, Dempster & Co., head the list of all other British steamship companies with 120 ships and 382,560 gross tonnage. This firm have also 25 vessels building, representing 76,149 tons. They are followed very closely by the British India Co., with a like number of ships, having a gross tonnage of 278,770, but only 7 new ships of 36,400 tons building; so that it would appear the palm is likely to remain with Messrs. Elder, Dempster & Co. for some time to come. The other local lines are placed in the following order: Frederick Leyland & Co. (1900), 55 ships, 242,781 gross tons, two building of 19,400 tons, White Star Line, 25 vessels, 212,403 tons, and one building of 20,000 tons; Alfred Holt & Co., 41 ships of 165,143, none building; Clan Line, 46 vessels, 164,467, none building; Allan Line, 36 ships of 152,367 tons; and two of 14,000 tons building; Lampart & Holt, 47 ships of 149,712, none building; T. & J. Harrison, 31 ships of 146,625 tons, and two of 14,600 tons building; Anchor Line, 31 ships, 132,540 tons and five with a tonnage of 28,250 building; Cunard Line, 26 ships, 125,332 tons; none building; Dominion Line, 13 ships, 105,430 tons, and one of 13,000 tons building; and Johnston Line, 24 of 100,426 tons, none building. To the White Star Line, closely followed by the Dominion Line, belongs the distinction of having the highest average tonnage, and it is interesting to note that the one building for them will carry the world's record of 20,000 tons.

IRON ORE MOVEMENT.

The shipment of iron ore from the lake docks to the stock piles of the furnaces has been anything but satisfactory. It is not due so much to the lack of railroad equipment, for the various lines have been able to fill about 100 per cent of the demands, but there has not been such a demand for the ore. The situation does not necessarily predict any great surplus on the piles at Lake Erie ports in the spring, but is rather indicative of a lack of interest in some circles that warrants a postponement of any questions touching the sales of iron ore, or contracts for next year's movement.

All matters touching ore are backward this year, more so in fact, than they have been for a good many seasons. This is probably due, as some have said, to the understanding that there will be no great change in either prices or carrying charges. It is known that the contract rates will be about 75 or 80 cents for the year, this being based upon the amount of material to be brought down the lakes this year, and the contracts already entered into between Messrs. Carnegie and Rockefeller concerning the movement of ore.

On other commodities the winter interest is very light. The winter corn at Chicago is still held back by lack of cold weather, and wheat and oats have been very largely stored. No activity at Duluth has appeared to start discussion going relative to spring freights.

THE Hartford Steam Boiler Inspection and Insurance Co. publishes a little book explaining the metric system, and containing a very extensive and complete series of tables for facilitating the comparison of metric measures of all kinds with those now in use in the United States. This little book has been received everywhere with great favor. The price charged for it is intended to merely cover the cost of typesetting, paper and binding. For the edition, which is bound substantially in leather, with red edges, \$1.25. A special edition on bond paper, with gilt edges, \$1.50. Orders should be addressed to the home office of the company at Hartford, Conn.



BUFFALO.

Special Correspondence to The Marine Record.

The steel steamer Wilkesbarre, 4,153 gross and 3,311 net tons, built here and hailing from this port, has been granted official numbers this week by the Treasury Department, Bureau of Navigation.

The Kingsford Foundry & Machine Works, of Oswego, N. Y., have just put out an attractive little brochure which shows the different styles of marine boilers manufactured by them, and briefly explains the advantage of each type. The company has erected one of the largest and best fitted boiler shops in the country and the products of the firm easily stand at the head. Those desiring any type of marine boiler should first consult this company.

Appointments as masters of the Lehigh Valley line boats for the coming season were given out this week as follows: Mauch Chunk, P. McCarlane; Wilkesbarre, D. Driscoll; Tuscarora, William Williams; Saranac, Charles Potter; Seneca, J. Whiteside; E. P. Wilber, Charles Fuller. The engineers have not been named. The Wilkesbarre was launched last summer, but the Mauch Chunk probably will not leave the ways before the opening of navigation.

There is a report that the excursion boat Unique which had been run on the St. Lawrence during the past season, had been purchased by the International Navigation Co. of New Jersey, representatives of which had been a few days ago inspecting the craft. The price mentioned is \$22,500. The Unique has given so many unique experience in building, fitting out, managing and owning, that the sooner she gets off the lakes the better for lives and reputation.

Harry J. Coulter, Cleveland, was elected first vice-president of the Licensed Tugmen's Protective Association, which was in session here last week. Michael Ryan, Duluth, was re-elected grand president, and E. E. Hand, Conneaut, was again chosen as grand secretary. The new men elected are T. V. O'Conner, Buffalo, second vice-president; Casper Bartley, Escanaba, third vice-president; G. C. Kenedig, Erie, grand treasurer. After the election the visitors were tendered a banquet.

The plan of the government to do a large amount of work in Niagara river next summer is one that ought to show how far it is safe to navigate swift water. As a rule the local vesselmen are against the undertaking. Some oppose it on the claim that it will lower the level of Lake Erie and others see a constant series of accidents there, no matter how well the deepening is done. What is needed is the improvement of Black Rock harbor, which has a lock and would not only float vessels in entire safety but would leave the level where it is. The river is already deep enough to accommodate the lumber fleet fairly well, but the further deepening of the river is quite a different matter. A nine-mile current is a factor in navigation that cannot be ignored.

With a view to facilitating navigation on the Niagara river, a committee of the American Association of Masters and Pilots of Steam Vessels this week filed with Major Thomas W. Symons, Corps of Engineers, U. S. A., United States Engineer for the Buffalo district, the following petition: Admiral F. J. Higginson, Chairman Light-House Board, Treasury Department, Washington, D. C.: Dear Sir—We hereby petition you to use your influence to have targets and range lights established on Niagara river through the Germania Park and Strawberry Island channels to assist boats navigating the river at night and to enable boats to come down the Niagara river in the spring while ice is still running and before the Government puts out the stakes. In addition to the targets and range lights we wish you would recommend gas buoys for the river to light the channel through the dangerous places of Germania Park and Strawberry Island, so that vessels can go up and down at night. Early in the spring it always happens that boats consigned to Tonawanda have to discharge their cargoes at Buffalo because they cannot run the river before the stakes are out, and the targets and range lights would enable them to do this. During the whole season, boats that get to Buffalo at almost dusk have to lie up there until daylight in the morning, while if they had lights they could come down without stopping at the breakwater at Buffalo. It very frequently happens that they not only wait until daylight, but lose most of a day on account of fog and smoke. At this port boats are very frequently unloaded about dark, and they cannot get up the river because there are no lights to enable them to keep the channel. As this is the second largest lumber port of the world, this condition of affairs should not be allowed to exist. Nine hundred and ten vessels arrived here last season, and 906 cleared from the ports of Tonawanda and North Tonawanda. We think it just to the vessel interests and to our city that these lights should be established this spring ready for the opening of navigation. Fifty-three vessels are now laid up in this port for the winter. It has been reported to us by marine men that if

the Strawberry Island channel were straightened, and if the obstructions were removed from this and Germania Park channels, vessels drawing sixteen or at least fifteen feet of water could safely come to Tonawanda and North Tonawanda. The appropriation of \$250,000 in the present river and harbor bill is said by United States Engineer Symons to be sufficient to accomplish this. In view of this, we ask you at your meeting to request all captains or owners who are conversant with the river to co-operate with Maj. Symons in the improvement of the channel the coming season. We trust that your board will recommend to have the above work done. Your truly, Charles Mayham, Nathaniel L. Cullin, M. P. Usma, J. U. Montgomery, Irving P. Grave, A. M. Halliday, committee. Major Symons stated yesterday that an investigation would be made in the matter and an attempt made to improve the service if the facts warranted such action.

CHICAGO.

Special Correspondence to The Marine Record.

The insurance companies have taken the wreck of the burned steamer City of Louisville off the hands of the Graham & Morton Co., and insurance to the amount of \$40,000 was paid. President Graham came to Chicago to charter a steamer, probably the Virginia, to take the place of the Louisville. The company will let a contract at once for a magnificent steamer to carry 4,000 people. The contract may be let in Detroit, providing.

The drainage board is loaded down with more litigation through an opinion handed down this week by the United States Supreme Court. The proceeding was brought by the state of Missouri against the state of Illinois and the drainage board, the end sought being to prevent the use of the canal because of its speedy pollution of the drinking water of St. Louis. The effect of the decision is to sustain the contention of the state of Missouri. The opinion was handed down by Justice Shiras, the chief justice, and Justices Harlan and White united in a dissenting opinion.

Urgent demands for the immediate construction of the proposed deep waterway from Chicago to the Gulf of Mexico, by connecting the drainage canal with the Illinois river after this latter channel had been dredged, and thus with the Mississippi, have been presented to the sanitary board in the report of J. L. Matthews, special expert for the board. Mr. Matthews made the trip from the lakes to the gulf by house-boat and his statistics are based on a careful survey of conditions. He urges that a channel 14 feet deep from Chicago to the Gulf of Mexico would be a giant impetus to every manufacturing or farming industry of Illinois, the Mississippi valley, and the southwest.

The Northern Steamship Co.'s elegant twin screw passenger steamers North West and North Land are to be taken off the Duluth-Buffalo route and run direct from Chicago to Buffalo, says the Chicago Times-Herald. This is the decree that has been sent out by the officials of the Great Northern Steamship Co. The decision was reached at a conference Monday at New York, and was the outcome of numerous private discussions of the subject by President James J. Hill of the Great Northern Railway Co., and General Manager W. C. Farrington of the Northern Steamship Co. This may be so and again it may not but if the North West and North Land are put on Lake Michigan route calling at Detroit each way they will no doubt give those two new steamers that are to be built for the Detroit-Buffalo traffic a merry whirl. It is said that the D. & C. Line are just warning other companies to keep off the track.

Commodore William H. Wolf, of Milwaukee, died at Milwaukee hospital Monday morning at 3:30 o'clock, after a lingering illness. Some time ago Mr. Wolf suffered a slight injury which developed into blood poisoning, and later the amputation of a leg became necessary in order to prevent the spread of the poison through the system. Owing to his advanced age and weakened condition, the patient was not able to withstand the drain upon his vitality and death resulted after more than a week of suffering and uncertainty. He was 72 years of age. Commodore Wolf was for many years a prominent member of the Masonic fraternity, and at the time of his death was a member of Independence Lodge No. 80, Excelsior chapter No. 40, Wisconsin commandery No. 1, Knights Templar, and Wisconsin consistory. At 11 o'clock Monday morning, less than eight hours after Commodore Wolf passed away, his brother, Peter R. Wolf, died at Milwaukee. He had been ill for a long time with cancer of the stomach. Peter R. Wolf was 64 years of age and for many years kept a store on Madison street.

A new form of life-boat, which, it is believed, will result in the saving of many lives at sea, was launched a few days ago from the yards of the Cuthbert Boat Co., Ninety-Second street and the Calumet river. It is the invention of Charles Mayo, formerly of the British navy, and employed in the Cuthbert yard. The lifeboat is in the shape of a barrel, being about 20 feet long, and composed of two cylinders, one inside the other. The width is the same as an ordinary lifeboat, and the capacity of the craft is placed at 50 persons. The space between the two shells will be filled with compressed air, to supply the occupants when the hatches are battened down in a heavy sea. The inner shell is pivoted at the ends and weighted at the bottom, so that it will maintain an upright position, no matter how heavy the sea. The outer shell is made of sheet iron, in much the same way that metallic lifeboats are built. The inner shell is of aluminum, with automatic aluminum hatches, which will close instantly when one enters the boat. Each boat will weigh about 3,000 pounds, and can be carried on davits, like an ordinary lifeboat, and lowered to the water in the same way.

CLEVELAND.

Special Correspondence to The Marine Record.

The steamer Meteor was launched at the yard of the Craig Ship Building Co., at Toledo, Wednesday afternoon.

The Chase Machine Co., of 111 Elm St., has issued an attractive new catalogue which describes many specialties in deck machinery for handling vessels, including hoisting winches, towing machines, warping engines, windlasses, etc.

A meeting of all the local managers of the Great Lakes Towing Co. at the various ports where that organization has its boats in commission, will be held in this city on Feb. 5. Matters pertaining to the future policy of the company are to be discussed and it is expected that new life will be put into the organization by the officers of the company here.

Col. S. M. Mansfield, Corps of Engineers, U. S. A., engineer of rivers and harbors in this district, who has been away on a short leave of absence, has returned to his desk. He had no opportunity earlier in the year to get away from his duties and decided to recuperate his strength before entering upon his work in this district. He will be ready for the spring programme when the War Department maps it out.

The stocks of iron ore on Lake Erie docks have not moved off quite as freely as during last winter. Increased demand during the past few weeks, however, has given encouragement that the stocks by May 1, possibly, will have been reduced to the same point as on that date a year ago, which was 1,720,656 tons. Such inquiries as have been made thus far by iron and steel manufacturers were principally for the purpose of getting estimates upon which to submit bids for work of various kinds.

Capt. Chas. Miner, 107 Birch St., dropped dead at his home, Tuesday. He had been suffering with an injured leg for three weeks, but was up and in apparently good health Tuesday. While sitting in the parlor he was seized with apoplexy, dropped to the floor and was dead when picked up. Mrs. Miner and four sons survive him. Capt. Miner had sailed the lakes for 30 years. For the past 10 years he commanded the Henry J. Johnson. He was 50 years old. The body was taken to Buffalo Thursday for interment.

Lieut. C. B. Morgan, U. S. N., reopened a naval recruiting office in the Case Building on Superior street, near the Custom House, yesterday, and will maintain it for two weeks to enlist landsmen for training, machinists, and musicians for the navy. He is under orders to enlist a full band of sixteen pieces and a band-master for the flagship New York, which will carry the flag of Rear-Admiral Rodgers in Chinese and Philippine waters. He is particularly desirous of getting a good experienced military band leader.

General-Manager Newman of the C. & B. Line is making great preparations to take care of the Pan-American business the coming season. The steamers City of Buffalo and City of Erie, which are at Detroit, are being put in shape and some changes are being made. Each of the boats will have a buffet in the after part of the ship on the dining-room deck. They will be finished in mahogany and will be large enough to seat about forty persons. At a meeting of the directors, held on Wednesday, a quarterly dividend of 1 1/4 per cent., payable February 1, was declared.

Mr. J. C. Gilchrist closed his option on the wooden boats of the Wilson Transit Line for \$300,000 this week. With the addition of these six boats, five steamers and a tow barge, the Gilchrist fleet now numbers 42 vessels when the wooden steamer Charles A. Eddy, which he paid \$70,000 for, is added to the list. With the eight steel steamers now building the Gilchrist fleet will have a capacity of two and a half million tons for the season's work. The Wilson Transit Co. has still seven steel boats. They are the steamers Capt. Thos. Wilson, H. W. Oliver, Andrew Carnegie, W. D. Rees, Yuma and Spokane and the schooner D. Z. Norton.

Six or seven years ago, not more than 10 per cent. of the iron ore in the Lake Superior region was controlled by the consumers, while now at least 75 per cent. of it is produced by the same interest that turns it into iron and steel and finished products. It is an interesting fact, however, that the 25 per cent. of ore bought in the open market at this time is about equal in tons to the 90 per cent. seven years ago. The total movement of ore from the Lake Superior region in 1893 was 6,065,716 tons, whereas in 1900 it amounted to more than 19,000,000 tons, so far the increase in the volume of ore has, for the present at least, compensated for the decreased percentage of ore bought in the open market.

The ninth annual reception and ball of the Shipmasters' Association was held at the Chamber of Commerce auditorium last Friday evening, and there was a scarcity of deck room when all the dancers got under way. Pretty girls were plentiful and "I'd Leave My Happy Home for You" was a very popular air in the ball-room and lobby. The old-timers that carry a little list along with their many years spent most of the time in the smoking room. Capts. S. C. Allen, C. L. Allen and C. M. Ennis of the reception and ball committee wisely arranged for continuous music, as all the guests would not be able to dance during the early part of the evening. Supper was served from 10:30 to 1:30 o'clock. Among those present were Capt. Geo. DeWolf, Capt. Alex McKay of Detroit, Capt. Charles Wallace of Chicago, Mr. and Mrs. Charles L. Hutchinson, Mr. and Mrs. J. A. Donaldson, Mr. and Mrs. William Symons of Fairport, Miss Lucy Fleming, Mr. and Mrs. Fred Saal, Mr. W. A. Hawgood, Mr. Thomas Teare, Mr. C. P. Gilchrist, Mr. and Mrs. John Warner, Mr. George Warner, Miss Grace Warner, Mr. J. A.

Gilchrist, Mr. Lawrence Mitchell, Miss Sarah Mitchell, Miss Gertrude Mitchell, Mr. John D. Mitchell, Miss Isora Brooks, Miss May Hagan, Mr. W. H. Fox, Miss Marion Beckley, Mr. E. C. Johnson, Mr. Fred W. Watson, Miss Mazie McKnight.

The Pioneer Steamship Co., has decided to name the boat which is now being built to their order, after the president of the company, J. T. Hutchinson. The boat was contracted for of the American Ship Building Co., some time ago. Chas. Hutchinson decided to name it after his father. The Pioneer Steamship Co., has been organized by election of following officers: President, J. T. Hutchinson; vice president, Thomas F. Griffin; treasurer and manager, Charles L. Hutchinson; secretary, W. H. McGean; directors, J. T. Hutchinson, T. F. Griffin, Martin Mullen, C. L. Hutchinson and W. H. McGean. The Lake Transit Co., an allied organization, has been organized to operate the Abyssinia, which was purchased during the early winter. The officers are: President, J. T. Hutchinson; vice president, T. F. Griffin, secretary, treasurer and manager, Charles L. Hutchinson; directors, J. T. Hutchinson, T. F. Griffin, Martin Mullen, J. B. Guthrie, and C. L. Hutchinson.

DULUTH-SUPERIOR.

Special Correspondence to The Marine Record.

Superior, Wis., receives more soft coal than any other port in the United States. For the year 1900 soft coal receipts were 1,515,887 tons.

Shippers of soft coal are not in position to talk of freights at all as yet. The large railway concerns of the Northwest are not in the market, and even if they were ready it is not probable that anything would be done, as the meetings of operators and miners for a settlement of wages do not occur until next week.

The ore men are not anxious to crowd the market to dispose of their commodity. There is said to be a strong sentiment that the producers will profit by waiting 45 to 60 days yet before entering into contracts for ore delivery for the approaching season. It is expected that prices for ore will be profitable, though perhaps not so much so as during 1900. There appears to be a certainty of low lake freights the coming season.

There has been an unusually heavy selling of lumber here to eastern wholesalers since Jan. 1, the total reaching about 1,000,000 feet daily for the month. This has been by but a few of the local manufacturers, many refusing to sell until later. Most of the lumber sold goes to New York points and nearly all of it is high grade. Prices are about \$1 better than last summer. In the woods logging progresses with extreme rapidity. For the Duluth district about 800,000,000 feet of logs are being put in, and this work is further along than usual.

A new navigation record has been established at Duluth by the steamer Bon Ami. She has been plying continuously for nine and one-half months between Duluth and north and south shore points on Lake Superior and she may round out a full ten months before she goes out of commission. It is certain that the Bon Ami will continue making trips until next week, and if she keeps them up until the middle of February it will give her a record of ten months uninterrupted navigation, beginning with the middle of April last year. Last winter the Bon Ami did not go into winter quarters until about January 15, and this winter it will be some time in February. The government ice report issued by the weather bureau states that Duluth Harbor ice ranges from 3 to 25 inches thick; none of consequence in Lake Superior; and considerable open water on Duluth side of Superior Bay.

The bulk of the Duluth-Superior harbor work for next season and probably for the season of 1902 also, will be in what is known as district No. 3. This district embraces that part of the harbor between Grassy Point and the upper end of Spirit Lake. The work this side of there is so far advanced now that it is more in the way of finishing up than otherwise. The channel on the north side of St. Louis Bay is completed to a point above the Missabe ore docks, the basin at "The Gate" is completed and the Superior Bay front channel is almost done. The Rice point channel is completed and the next two seasons will witness the completion of the Duluth harbor basin. This harbor is to be 3,600 feet in length and 2,000 feet wide. It is dredged the entire length to a width of 1,100 feet. The width will be increased about 450 feet next season and about as much the following season.

Henry C. Laverty, of Superior, has patented a self-inflating life raft, which is capable of being folded into small compass when not in use, and which inflates immediately when taken out of its rack, without waiting until it strikes the water. The raft is intended for the use of several persons if necessary, and can also be utilized for carrying supplies. To accomplish its inflation a chemical compartment is provided with a quantity of any suitable sodium or potassium, which will be attacked by an acid, so as to evolve a sufficient quantity of gas for the expansion of the air-tight ring. In order to provide the means for giving a day or night signal, the central mast is hollow and contains a quantity of calcium carbide, which forms an illuminating gas as soon as submitted to the action of the water. As the tube is provided with burners at either end, it makes no difference which side up the raft falls. For day signaling a flag is lashed to the mast. The netting in the center is tightly strung and will support several persons, being suspended above the water level to keep the passengers as dry as possible under the circumstances.

PORT HURON.

Special Correspondence to The Marine Record.

Capt. Fitzgerald has been confined to his home on Military street the past week with an attack of the grip.

Fred. Haynes and family, of River street, will leave on Saturday night for a stay of several weeks at St. Antonio, Texas.

Capt. B. D. Townsend, of Algonac, will sail the steamer Reis during the coming season. He commanded the steamer McWilliams last season.

Capt. C. B. Galton, of Algonac has been assigned to the command of a new steamer now on the stocks at Cleveland, to be added to the Mitchell fleet. The captain sailed the steamer Reis last season.

Archie Wright has a gang of men at work repairing the boiler on the steamer Faustin at Marine City. The Faustin was formerly the E. H. Jenks.

Capt. Edward Thorpe, representing the Inland Lloyds, is spending the week in Port Huron, making an inspection of the different vessels at this port.

The steamer Mary is bringing to Port Huron daily 500 barrels of salt from the Diamond Crystal Salt Works of St. Clair. The salt is being shipped to different parts of the country.

The crystal wedding of Capt. and Mrs. G. A. Lyons, of Algonac, on Monday evening, was an auspicious reminder of their marriage, as most of those attending were present at their wedding 15 years ago.

C. H. Sinclair, who has spent the past week or ten days visiting friends in Port Huron, has returned to his home in Chicago. He will come here again on the occasion of the national meeting of the Shipmasters' Association.

Mrs. Warwick, who died in Detroit last week, was the wife of Capt. Burt Warwick, who sailed the W. K. Moore last season. Her death was a shock to her many friends for the reason that the last report was that she was recovering.

Information has been received in Port Huron to the effect that before the city can begin the construction of a canal from Lake Huron to Black river, it will be necessary to secure the consent of the Secretary of War. This information comes from the engineer's office at Detroit.

While considerable dissatisfaction is claimed to exist in the ranks of the Shipmasters' Association, those present at the annual meeting of the grand lodge, held here this week, state that no reorganization would take place along labor lines, although this was talked of outside. It will probably be decided to adopt a fifty-year age limit, as considerable objection has been raised by younger members to taking in members above that age. The membership of the association is 725. Since the organization was started, \$113,000 has been paid out to beneficiaries. The grand lodge has on hand \$3,201 and local lodges have the following balances: Buffalo, \$410; Port Huron, \$503; Chicago, \$350; Cleveland, \$2,300; Milwaukee, \$150; Detroit, \$600; Marine City, \$150; Toledo, \$380. The convention closes on Friday night with a grand ball.

DETROIT.

Special Correspondence to The Marine Record.

Judge Carpenter this week dismissed the bill of complaint filed by John E. McSweeney against the Cresent Transportation Co. McSweeney sued on behalf of the engineer and captains of the line, to recover 2 per cent of profits of the business done in 1895, which the men had excepted in lieu of a 20 per cent. reduction.

The Seamless Steel Tube Co., of Detroit, has now completed its new factory. The tubes manufactured by the company are especially adapted for marine and all other classes of boilers, cylinders and hollow shafts, etc., and the facilities possessed by the new factory cover a range of sizes from 1 inch to 3½ in. outside diameter. The material used is the very best grade of open hearth steel, manufactured especially for the purpose.

The suit of the Williams Transportation Co., of South Haven, Mich., vs. the Darius Cole Transportation Co., of Detroit, has been begun in the Cass circuit court before Judge John R. Carr. In September, 1899, the Williams company bought of the Cole company a passenger boat, the Darius Cole, to run on Lake Michigan between South Haven and Chicago, for \$125,000. The boat was guaranteed to run 15 miles an hour, the plaintiff claims. The Williams' Co. paid \$10,000 on the contract being signed, and \$65,000 on delivery of the boat. The company gave notes for the remaining \$50,000. The Williams Co. are suing on the guarantee and has tendered the boat to the defendants and ask the return of its money and notes.

Although a number of local men will be interested in the two big passenger steamers, contracts for which were closed Saturday, very little can be learned about the deal. The Detroit Journal says: "Only the general scheme of the two boats has been concluded thus far," said General Manager Carter of the D. & C. "The details will be worked out by degrees. The line will be managed from the offices of the D. & C., much on the plan of the management of the Cleveland & Toledo line. At Buffalo the C. & B. facilities and representatives will be utilized." Three-quarters of the stock of the company, which is to be capitalized at \$1,500,000, has already been subscribed, Detroit being represented

by President McVittie and M. E. Farr, secretary of the shipbuilding company, Frank E. Kirby, the designing engineer of the boats, and Senator McMillan, David Carter and others of the D. & C. line. Cleveland capital is interested through General Manager Newman, M. A. Bradley, George W. Gardner, and others of the C. & B. line. The remainder of the stock is still to be disposed of.

FLOTSAM JETSAM AND LAGAN.

Capt. Charles Ross, late of the steamer Alice Stafford, will next season command the steamer Hennepin, which is to take the place of the Stafford on the route between Gladstone and Owen Sound.

The January edition of Samuel Holmes' (66 Broad street) steam vessel circular has been issued and contains the dimensions and particulars of scores of steamers of every size and class, including steam yachts. Mr. Holmes also has dredging machines, marine engines and boilers for sale. The circular will be sent on application.

Capt. William Parsons Robinson, a retired vessel master who had sailed the lakes upward of thirty years, died on Sunday at his residence in Milwaukee aged sixty-two years. During his sailing experience he owned interests in and commanded the schooners Dreadnaught and Ethel. Deceased hailed from Thomaston, Maine, and belonged to a seafaring family.

According to the Chicago Inter-Ocean there is between 2,000,000 to 3,000,000 bushels of corn held in cars at that point. Some of the elevators are filled and elevator people are loading oats and wheat into boats to make room. The congestion is principally at South Chicago and on the belt line roads. A good part of the corn sold the last few days has been by elevator people, who had it on track and were anxious to move it.

The American Association of Masters and Pilots of Steam Vessels, which was in session here all last week, adjourned on Saturday. A committee conferred with the Secretary of War to request the deepening of the channel of the Hudson river for several miles north of Troy. The Board of Supervising Inspectors was asked to make several changes in the rules governing inspection, and the Light-House Department was requested to change various lights and establish a number of buoys. The following officers were elected: Grand Capt. John C. Slive; grand first pilot, M. P. Usina; grand second pilot, Charles Maytham; grand purser and counsel, Luther B. Dow; grand captain's clerk B. F. Perkins.

There is an effort on the part of lumber carriers to make some sort of a stand against the chartering bureau that was set up last season by the Buffalo lumbermen is the interest of uniform but low freights. As business was dull naturally the plan worked and the bureau did as it pleased all summer. The owners tried hard to get out from under but were not able, and now they say that if there must be one bureau there ought to be two, so that combination can act against combination. It was predicted last summer that the lumbermen's pool would go to pieces the moment vessels became scarce, but as they were in excess all summer that prospect did not materialize. With the vesselowners the chances of a break would be still greater, for the interests are still more scattered and there is a less union of feeling than with the lumbermen, who are willing to act as a unit if they can get tonnage as they require it.

The Menominee Herald claims to have it from good authority that the Ann Arbor Railroad Co. will build an ice crusher of 3,500 horse-power, and have the craft ready for business at the close of navigation the coming season. By that time the Sturgeon Bay canal will have been deepened to at least eighteen feet, and possibly twenty, which would float the company's big car ferries with full cargoes via the canal to and from that city. The company, says the Herald, could not afford to run its car ferries the present winter via the Sturgeon Bay canal with half loads, and with full loads they touched the bottom in many places, and in one instance a grounding occasioned several hours' delay. Besides, it is too great and expensive a task to maintain an open channel through the ice for a distance of forty-five miles with the facilities now at hand. This conclusion forced itself upon the company officials after they had spent thousands of dollars in futile attempts to get the better of the Green Bay ice fields.

Although affairs touching the proposed rates for the coming season of navigation are very quiet, seemingly, there is a strong undercurrent of feeling concerning them. When the shippers aver that the contract rates will approximate seventy or seventy-five cents, the owners at once display some ill-humor, and ask if the shippers expect them to carry their product at a loss to the boats. They say that it costs at least 80 cents a ton to operate a 5,000-ton boat under present conditions, and announce that they will take nothing less. They say, in fact, that anything short of eighty or eighty-five cents on next year's contracts, will not be thought of. The shippers undoubtedly were making their calculations upon the rate agreed upon between Messrs. Rockefeller and Carnegie, which was thought at that time to be satisfactory. This provides for a fifty-cent rate, the ore free in and out. This means, under the circumstances prevailing last year, a rate of about seventy cents to the boats which are compelled to pay the unloading charges. Although this feeling exists, nothing is being done that even suggests the possibility of a charter.

REMINISCENCES—CAPT. CHARLES GALE.

All of the older members of the lake marine community will remember Capt. Charles Gale, now living at Sarnia, Ontario, in his 85th year. Capt. Gale writes Mr. Junius S. Smith, of Buffalo, as follows:

"Your report of the season weight of grain received at Buffalo has reached me, as it has done for many years past. I thank you for same. The Buffalo paper also reaches me each week, sent me by your kind hand. Only think, in the year 1839 I brought the first wheat from Michigan City to Buffalo, 5,000 bushels, in the brig John Kinzie, of Detroit. It was consigned to Messrs. Joy & Webster. We unloaded it with pails. We took on 200 barrels of flour at Detroit, and unloaded our cargo into canal boats. Coming down at that time, we were close into the east shore on Lake Michigan below Muskegon. We saw something swimming off shore. Saw Indians on the beach. We lowered the boat, went to it and found it was a deer, a doe. We lifted it into the boat, it was tired out, and it lay down in the boat. We hoisted the boat up and took the doe out, made a bed for her on deck. Two hours after she gave birth to two little fawns with white spots on them. We fed her on cut cabbage leaves and boiled wheat and biscuit. She was very tame and loved her little ones. When we got into Buffalo, we lay at the south pier. Capt. Ramsey saw the deer and wanted them. I gave them to him. He was light-house keeper at that time. He had a nice garden and a large yard. That side of Buffalo creek was all farms then. Milk men had their cows over there and they lived there. We used to unload staves and lumber on that side. Stave dealers those days were J. S. Harbeck, and Messrs. Hosmer, of Rochester. Forwarders were Joy & Webster, Mr. Davis, H. S. Beecher, Mr. Law, John G. Deshler, Hazard, Fox and Bruce, ship chandlers, Howard Williams & Co., store along side of canal. Very honest men and kind. Sailmakers, R. P. Provost and S. A. Provost. Market house those days was up at the Liberty Pole. Farmer wagons had their stand there. Many vessels from Cleveland, Sandusky and other ports were consigned to Black Rock with wheat to the mill. We hoisted it out in bags. It took three days to unload. Then tow vessel up to Buffalo with horses if the wind was not fair. We had a long towline from masthead to shore. The lake shore was clear from the dam to Buffalo. There was an old shed on corner of ship canal and Buffalo creek. In heavy gales of wind vessels ran to Black Rock for a harbor, fearing to ground in Buffalo creek. They had a floating dry dock there. Capt. F. L. R. Pope, of Buffalo, in the steam vessel inspection service, did his first sailing with me. I was master of the schooner Dewitt Clinton. He can tell you of early times, if you ask him.

What grain went to Buffalo in 1900 would have covered every house at that time. I hope this may find yourself and family well. I have been very sick. I am very feeble now. I close, wishing you a long life with happiness. Many thanks to you.

CHARLES GALE.

TO LOOK AFTER LAKE LEVELS.

The importance of the Great Lakes to the commerce of the country and the possibility of a dangerous reduction of their level was recognized by the House of Representatives the other day, when it passed an amendment to the River and Harbor bill, authorizing the President to invite Great Britain to join in the formation of an international commission, whose real purpose would be the investigation of facts and the adoption of measures for the maintenance of that level.

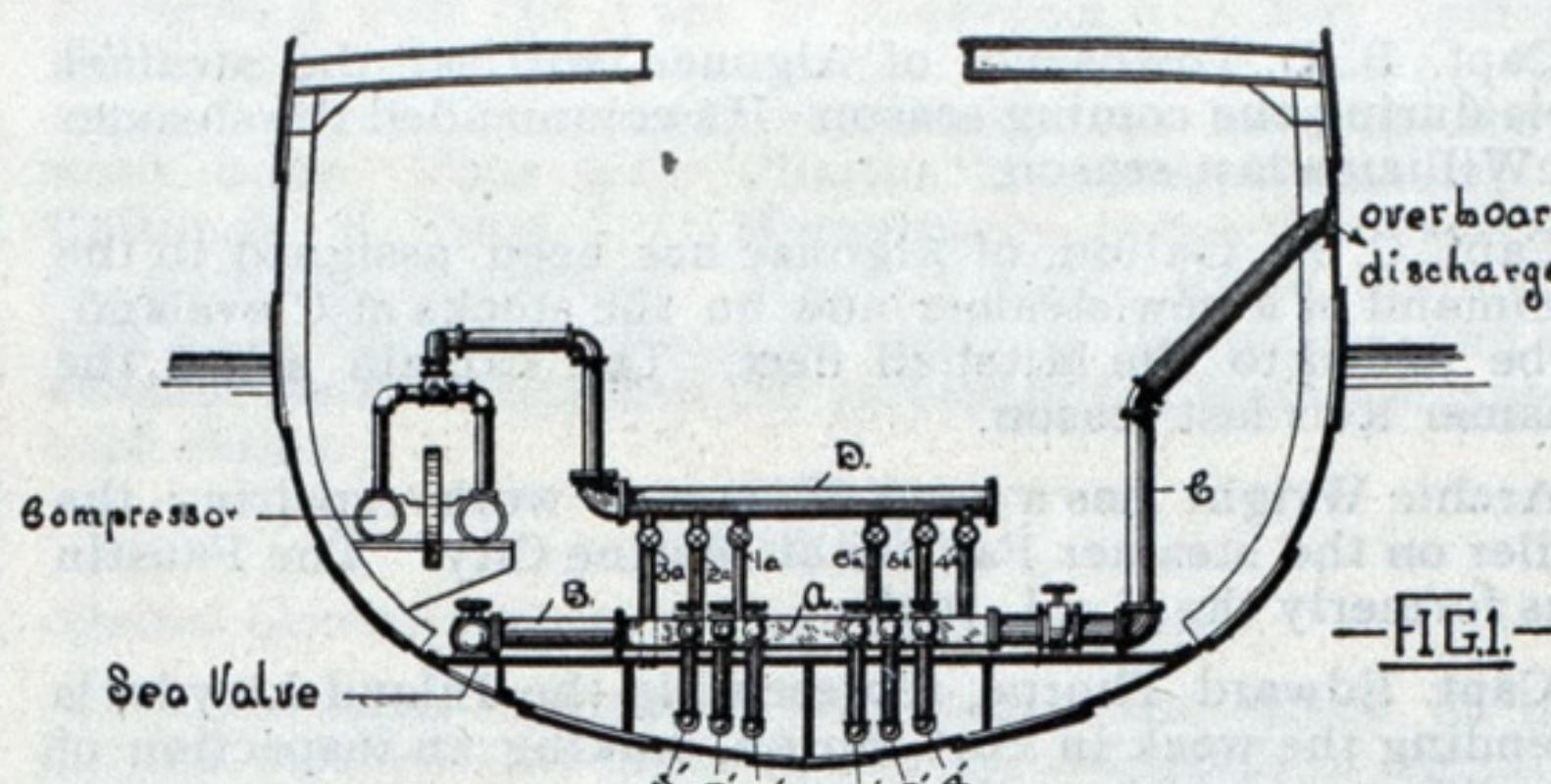
The commission is to consist of four members from each country. They will be called upon to report the condition and uses of the waters next to the boundaries of the United States and Canada, including all the waters of the lakes and rivers which discharge their surplus through the St. Lawrence river to the Atlantic ocean. Its report will cover the effects of the waters of the lakes on the shore thereof, and of structures standing thereon. It will pay special attention to the diversion of the waters of the lakes and the effect of them on navigation, reporting measures calculated to stop or regulate such diversions.

The amendment authorizes the president to appoint the four American members of this commission and the commission is empowered to hire surveyors and other experts to assist in carrying out the object to be attained. An appropriation of \$20,000 is made to pay the American part of the expenses. It was agreed to by the Senate as a separate measure some weeks ago, and is, therefore, little likely to encounter any opposition in the upper house of Congress.

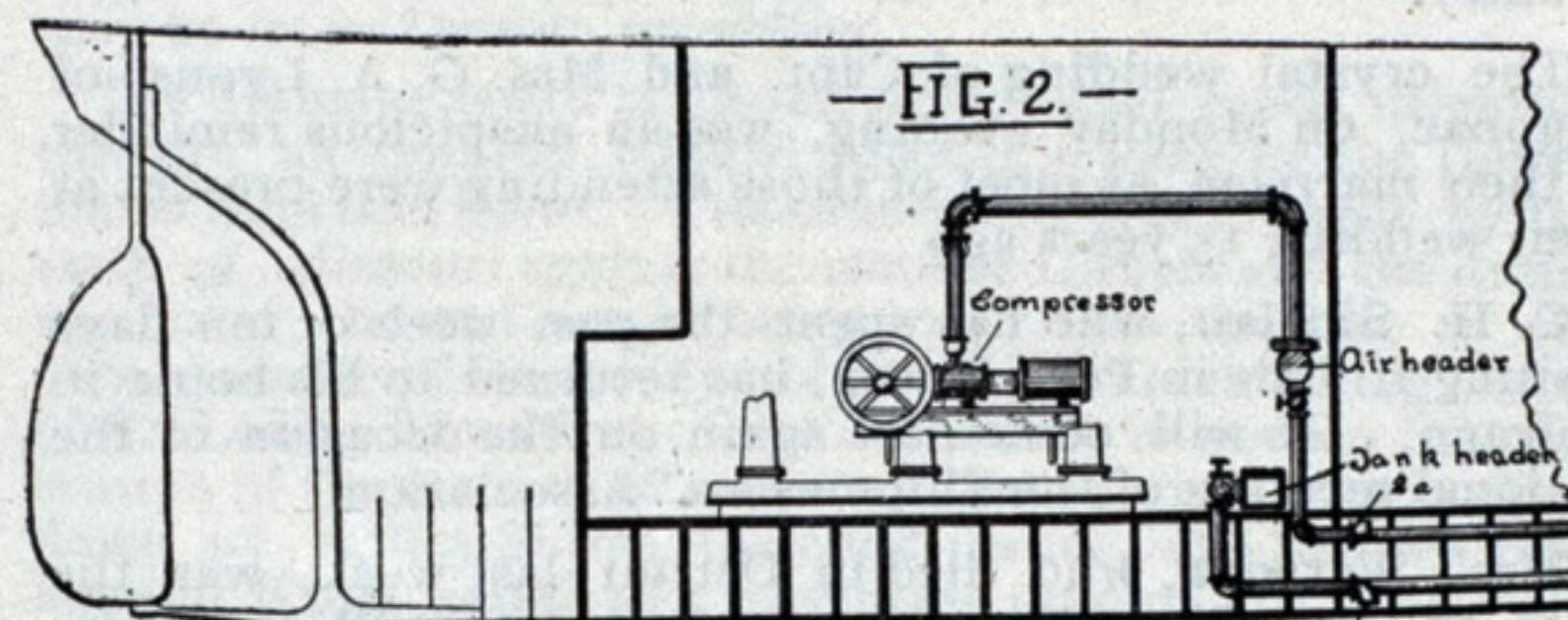
HANDLING WATER BALLAST IN SHIPS BY COMPRESSED AIR.

(ILLUSTRATED).

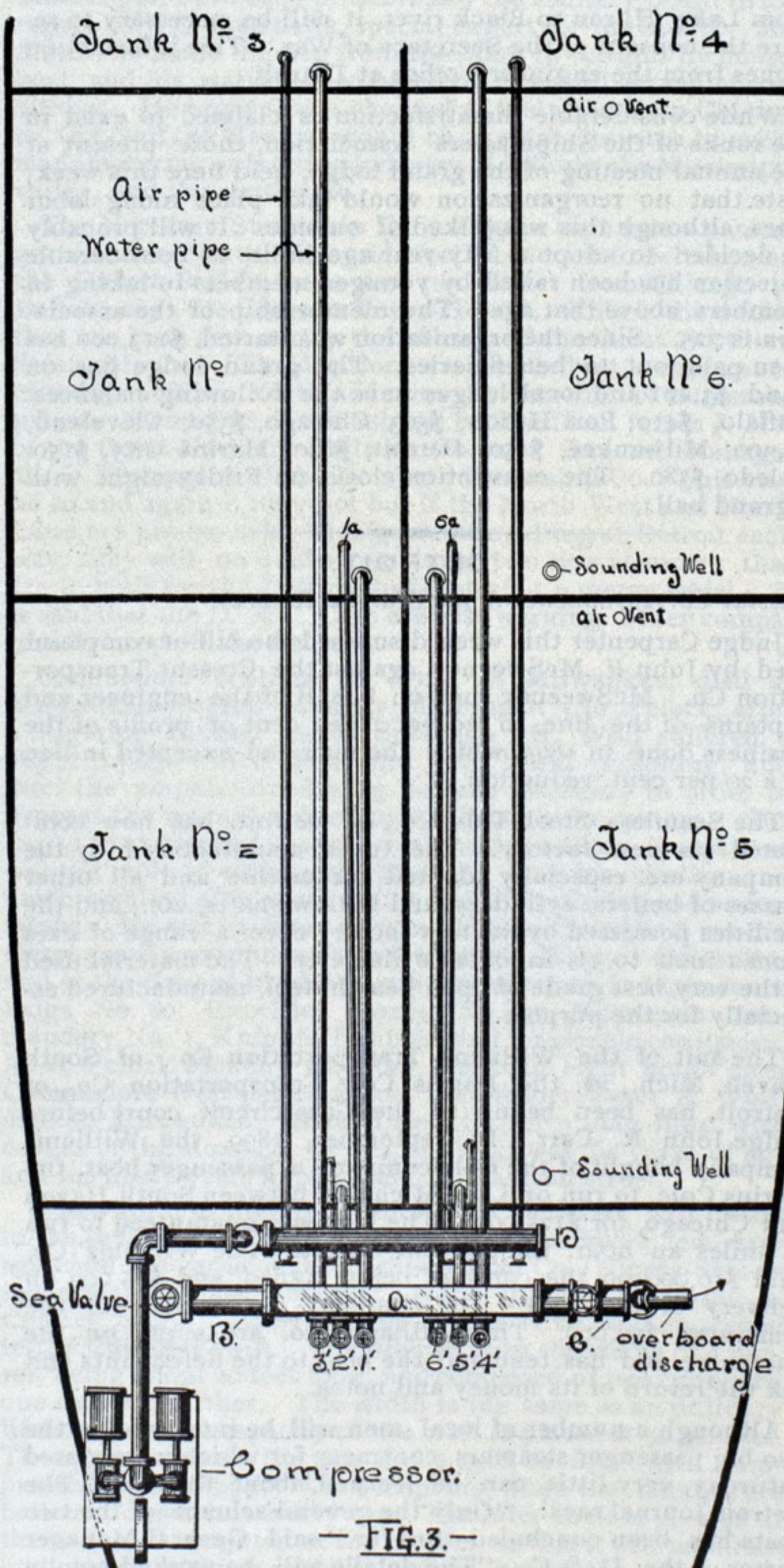
Among the recently discovered uses for compressed air is that of handling the water ballast of ships. As is well known, modern vessels are provided with an inner water



tight floor or bottom, usually placed four or five feet above the keel, forming with the shell a double bottom which strengthens the vessel, and makes it safer against leaks.



The space between the bottoms is divided into a number of compartments into which water is flowed for use as ballast.



In order to trim ship it is necessary to vary the amount of water ballast or to shift it from one compartment to another. This has hitherto been done by means of ponderous ballast pumps attached to a reservoir or "header" and connected by pipes with the various tanks.

In Figures 1, 2 and 3 we illustrate a system of ballast handling that dispenses with the pumps and controls the ballast entirely by compressed air. This system is the pioneer of its kind and is described in a patent issued November 20, 1900, to Geo. B. Willcox, of Bay City, Mich. The system consists in omitting the ordinary ballast pump by which the water ballast is usually controlled, and using an air compressor to force air into the tank to be emptied, thus displacing the water, which flows out into the water header and thence either into another tank or overboard, as desired.

A compressed air reservoir or header similar to the water ballast header is provided, and each tank is connected to the air header by means of an air pipe. Suitable valves permit the discharge of air into the tanks in any desired combination. Owing to the high velocity of the air a large volume of water can be displaced by means of a small air pipe.

The advantages of this system are that the water ballast can be shifted at will from one tank to another without pumping any water overboard and without taking in harbor water. The location of the air compressor is not confined to the line of the discharge pipe as ballast pumps must be. With this system the ballast water does not pass through pump valves, but has a free flow and the frictional resistance of valves and the danger of blocking them by refuse is eliminated. An air compressor is very much lighter for a given capacity than the ordinary ballast pump, and will work with about ten times the economy of the ballast pump, besides being available for operating deck hoists, capstans, ash hoists, repair tools, etc., when it is not being used for handling the water ballast. This system is the subject of the first patent ever granted for a pneumatic ballast handling system, and will doubtless soon come into general use.

THE AMERICAN BUREAU OF SHIPPING.

The volume for 1901 of the Record of American and Foreign Shipping is the thirty-third annual issue of this valuable register and classification of shipping. The Record contains full reports and particulars of about 17,000 vessels of all classes and nationalities, rules for the construction and classification of steel, iron and wooden vessels, rules for the construction and survey of steam machinery and boilers for vessels, provisions for the installation of electric lighting and power apparatus on shipboard, and much other valuable information of special importance to underwriters and all other persons interested in shipping.

Besides the usual full information for the benefit of subscribers in the way of rules for construction with their accompanying illustrations and tables, all of the utmost practical and technical value, the work contains such features as lists and addresses of prominent shipbuilders, dry docks, marine railways, marine machinery and boiler constructors in the United States, list of vessels whose names have been changed, also compound names, indexed by last name, names and addresses of owners of vessels classed in the Record, all of which is nowhere else so completely classified.

The work is approved and endorsed by the important boards of underwriters in the United States and is accepted by merchants and underwriters throughout the world as a standard register and classification of shipping. This excellent work has been thoroughly revised to date and contains a large number of classifications not included in previous issues. The Record is published by the American Bureau of Shipping, 66 to 70 Beaver street, New York.

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT, Bushels.	CORN, Bushels.	OATS, Bushels.	RYE, Bushels.	BARLEY, Bushels.
Buffalo	2,858,000	13,000	45,000	55,000	1,009,000
" afloat	1,044,000	...	162,000	...	...
Chicago	11,598,000	3,435,000	3,047,000	628,000	260,000
" afloat	57,000	175,000	948,000	...	...
Detroit	506,000	432,000	1,000	32,000	24,000
Duluth	6,923,000	1,783,000	891,000	283,000	75,000
Fort William, Ont.	1,377,000	...	...	...	...
Milwaukee	1,045,000	578,000	745,000	1,000	29,000
Montreal	94,000	16,000	92,000	9,000	42,000
Port Arthur, Ont.	250,000	...	...	...	...
Toledo	556,000	1,669,000	293,000	9,000	...
Toronto	79,000	...	2,000	...	2,000
On Miss. River	100,000	80,000	...	...	...
Grand Total	60,791,000	14,137,000	10,154,000	1,214,000	1,939,000
Corresponding Date, 1899	55,597,000	14,526,000	5,332,000	1,163,000	1,760,000
Increase	...	2,394,000	619,000	...	...
Decrease	405,000	...	3,000	72,000	...

While the stock of grain at lake ports only is here given the total shows the figures for the entire country except the Pacific Slope.

THE COMMERCE OF THE WORLD.

The Treasury Department of the United States is preparing a statistical abstract which will show the imports and exports of every country in the world which issues reports of its commerce. The aim of the Bureau of Statistics is to present a comparative picture of the world's commerce, not only of today, but for a long term of years, extending into the past, the measures of value and quantity prevailing in the United States being employed.

This is the first time such a thing has ever been attempted, and it will be an important contribution to commercial history. The opening chapter shows the annual exports and imports of 47 different nations, running back from the present date as far as records have been kept. The next chapter will give the details—the different articles of merchandise exported and imported and the different countries among which the commerce of each nation has been distributed.

The high position of the United States among commercial nations and the enormous development of foreign trade will not only gratify but surprise every patriotic citizen, and the comparison with other nations will astonish the world. The comparisons of the commerce of the United States with the official figures issued by the governments of Great Britain, France and Germany are indeed amazing. For example, the following statement shows the development of the foreign commerce of Great Britain and the United States during the century :

	IMPORTS.			EXPORTS.		
	1800.	1899.	Per cent. of increase	1800.	1899.	Per cent. of increase
Great Britain.....	\$ 81,310,000	\$ 2,043,896,450	2400	\$ 111,107,000	\$ 1,287,151,345	1059
United States.....	52,121,891	685,441,892	1215	31,840,903	1,203,931,222	3681

The first comparison shows how much more able the people of the United States are to supply their own wants than those of Great Britain. The imports of this Republic in 1800 were nearly two-thirds as much as those of Great Britain, while at the end of the century they are less than one-third. At the same time the exports of the United States have increased three times as rapidly as those of Great Britain. Although in 1899 the exports of the United States were less by \$80,000,000 than those of Great Britain, in 1900 the United States surpassed Great Britain, with a total of \$1,394,483,082, of which \$433,851,756 were manufactured articles in which the two countries were in direct competition.

The records of France do not go back so far as the beginning of the century, therefore the comparisons must begin with 1831, and are as follows :

	IMPORTS.			EXPORTS.		
	1831.	1899.	Per cent. of increase	1831.	1899.	Per cent. of increase
France	\$ 72,182,000	\$ 872,032,000	1108	\$ 88,088,000	\$ 801,452,000	810
United States.....	82,008,110	685,441,899	724	59,218,683	1,203,931,222	1933

It will thus be seen that while the United States has kept pace with Great Britain, it has surpassed France in the production of articles needed by the outside world as well as those required by its own people. There is a popular impression that the French surpass all others in supplying their own necessities and furnishing their own luxuries, but these figures show that their own dependence upon foreign nations has been increasing with the years and that the balance of trade is now largely against them.

A comparison with the German Empire cannot extend back of its origin in 1872, but the figures from that date are extremely interesting and significant, as can be seen by the following table :

	IMPORTS.			EXPORTS.		
	1872.	1899.	Per cent. of increase	1872.	1899.	Per cent. of increase
German Empire.....	\$ 793,726,000	\$ 1,304,977,000	64	\$ 564,165,000	\$ 801,452,000	42
United States.....	560,419,034	685,441,892	24	425,487,131	1,203,931,242	181

In the case of Austria-Hungary, the record begins with the year 1860; Belgium, 1831; France, 1831; Germany, 1872; Italy, 1861; the Netherlands, 1860; Russia, 1861; Spain, 1860; Norway, 1860; Sweden, 1860; Canada, 1851; Mexico, 1873; the Argentine Republic, 1870; Chile, 1860; China, 1868; Japan, 1874; India, 1851; Australia, 1851; Egypt, 1874, and

Cape of Good Hope and Natal, 1851, in each case the figures covering the entire period from the earliest date named to the present time. The subsequent chapters will give the details of the commerce of each of these countries.

A specially interesting fact developed by the study of the figures given above, as well as the comparisons with those of other nations, is that in the case of the United States they show with much greater frequency than in any other country a favorable "balance of trade," or excess of the value of exports over imports. Of the 47 countries included in this comparison, 18 show an excess of exports over imports, and 29 an excess of imports over exports. The principal countries which show an excess of exports over imports are Canada, Mexico, the Argentine Republic, Chile, Australasia, India, Egypt, Spain, Austria-Hungary and Russia. No one of the 18 countries whose exports exceed imports shows a balance of trade approaching that enjoyed by the United States, and a compilation of the excess of exports in the entire group of 18 countries having such excess gives a grand total of only \$414,845,000, in the latest obtainable year, as against an excess of \$544,542,131 in favor of the United States alone in the fiscal year 1900.

MORE LAKE ERIE STEAMERS.

A new direct line of steamers is to be established between Detroit and Buffalo, and two new side-wheel passenger boats have been ordered for the route.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

Action Against City for Injury to a Vessel by Collision.—A city is liable by maritime law for the negligence of its servants in charge of a fire-boat while hastening to put out a fire raging at the head of a dock, in consequence of which the boat collides with and injures another vessel. Robert W. Workman, Petitioner, vs. Mayor, et al., 21 Sup. Ct. Rep. (U. S.) 212.

Negligence of Persons in Charge of Fire-Boat.—An exemption of a fire-boat belonging to a city from seizure in rem, if such exemption exists, will not relieve the city from liability to an action in personam under the maritime law for injuries to another vessel, caused by negligence by those in charge of the fire-boat. Robert W. Workman, Petitioner, vs. Mayor, et al., 21 Sup. Ct. Rep. (U. S.) 212.

Pilots—Obligation to Take—Foreign Ports.—In Consol. Act. N. Y. 1882, § 2119, which requires domestic vessels navigating under a coasting license from the United States to take a licensed pilot on entering or departing from the port of New York, only when such vessels are from a foreign port, whether the words "foreign port" mean a port within the sovereignty and dominion of a foreign nation, que re. Bigley vs. New York & P. R. S. C., 105 Fed. Rep. (U. S.) 74.

Collision—Boat at Anchor—Proximate Cause.—Where, in an attempt to enter a slip, the wheel of a boat picks up the anchor chain of another boat, which is anchored in the East river, within 150 feet of a wharf, in violation of the Treasury Department regulations, whereby it is drawn towards the latter boat, and into collision with it, the owner of the latter cannot maintain an action for the injuries sustained, since his unlawful act in so anchoring is the proximate cause of the injury. Foley vs. McKeever, 67 N. Y. Supp. 559.

Shipping—Delivery of Cargo—Custom as to Place of Delivery.—A custom having been established to deliver cargoes of tea within a particular part of the water front in the port of New York, a vessel having a cargo consisting principally of tea is bound to make delivery there if required by the consignees, and it is no defense to a suit for damages for the refusal to discharge there that in one or two instances other vessels have also refused, nor is it material that other piers afforded better facilities for discharging. Hewlett et al. vs. Burrell et al., 105 Fed. Rep. (U. S.) 80.

Pilots—Obligation to take—Vessels from Porto Rican Ports Exempted.—Rev. St. § 4444, exempts all steam vessels sailing under license from the United States, and employed in the coastwise trade, from the pilotage laws of the states. Consol. Act N. Y. 1882, § 2119, requiring foreign vessels and vessels from a foreign port to take a licensed pilot on entering or departing from the harbor of New York, exempts from its provisions domestic steam vessels licensed and engaged in the coasting trade. Held, that, under the provisions of either statute, domestic steam vessels, licensed by the United States since the passage of the Porto Rican act of April 12, 1900, and entering the port of New York from Porto Rican ports, were exempted from the payment of pilotage charges imposed by the state statute. Bigley vs. New York & P. R. S. C., 105 Fed. Rep. (U. S.) 74.

Shipping—License for Coasting Trade—Porto Rican Ports—Section 9 of the Porto Rico act of April 12, 1900, (31 Stat. 79), which provides for the nationalization of all vessels owned by the inhabitants of Porto Rico, and for their admission to all the benefits of the coasting trade of the United States, and that "the coasting trade between Porto Rico and the United States shall be regulated in accordance with the provisions of law applicable to such trade between any two great coasting districts of the United States," extends and makes applicable the privileges and restrictions of the coasting trade of the United States not only to trade, but also to navigation between the ports of Porto Rico and those of the United States; the words "coasting trade" having been used and construed as extending to the navigation by means of which such trade was carried on in the Alaskan act of 1868. Bigley vs. New York & P. R. S. C., 105 Fed. Rep. (U. S.) 74.

Collision—Negligence—Evidence.—Plaintiff's father was fishing on a clear, moonlight night with plaintiff's net, in a fish boat, which was well lighted and plainly visible at a considerable distance. The fish boat was lying almost motionless near the middle of the stream, which was about a half a mile wide, and the net extended to the eastward to within 200 feet of the shore, with its buoys all visible. Defendant's tug boat approached, towing a number of loaded canal boats, in the middle of the stream, headed slightly towards the west, and by following such course would have avoided the fish boat. When about 200 feet from the fish boat the pilot of the tug changed the tug's course without any reason, and ran to the east of the fish boat, and about 2 feet from its stern, catching the net and cutting it in two, and dragging the boat alongside the tug. Just as he changed the tug's course, the pilot saw that the men in the boat were pulling in the net. Held to show gross negligence in the navigation of the tug boat, since it was the duty of the tug to keep away from the fish boat, and its owner was therefore liable for the damages. Polhamus vs. Cornell Steamboat Co., 67 N. Y. Supp. 577.

miles per hour with ease. Mr. McVittie says the steamers will be as fine as the shipbuilding company can make them, and he vouches for the excellence of the service when the recent products of that company are taken into consideration, the City of Erie being an example.

It is further known that it is the intention to make nightly trips direct from Detroit to Buffalo without a stop. The distance is 256 miles and the run is to be made in 13 hours. This will necessitate leaving Detroit early in the evening, say about six o'clock, and arriving in Buffalo in time for breakfast.

Many of the details have not been determined so far, but it is understood that an arrangement has been entered into

with the Detroit and Cleveland Navigation Co. that the dockage may be done at that company's wharves in Detroit. The D. & C. people will handle the boats the same as they do their own now. It is also expected that a similar arrangement will be entered into between the new company and the Cleveland & Buffalo Transit Co.



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CLEVELAND, O., JANUARY 31, 1901.

COMMERCIAL SIGNIFICANCE OF THE GREAT LAKES

The traffic of the Great Lakes has grown with marvelous strides, but its magnitude is scarcely appreciated, although the statement is made that a larger tonnage passes Detroit, Mich., between the upper and the lower lakes, than at any other point on this earth. While below this immense traffic railroad trains pass through a tunnel laid under the St. Clair river, connecting the tracks in the United States and Canada. Just what this lake traffic amounted to in 1900 cannot now be given in exact figures, but it probably exceeded 40,000,000 tons. Fortunately the reports issued by the superintendent of the canals at Sault Ste. Marie, Michigan and Ontario, aid us in this estimate. The commerce which passed through them in 231 days during navigation in the year 1899 is represented by 20,255 vessels, carrying over 25,000,000 tons of freight, of which over 15,000,000 tons was iron ore, and 4,000,000 tons was coal. One-fourth million tons was pig iron and manufacturered iron, 120,000 tons metallic copper. In addition the traffic included over 58,000,000 bushels of wheat, 30,000,000 bushels of other grain, over 7,000,000 barrels of flour, over 300,000 barrels of salt and 1,038,000,000 feet board measure of lumber. Eighty-one per cent. of the vessels and 86 per cent. of the above tonnage passed through the American locks, the balance going through the canal on the Canadian side.

The average cost of carrying one ton of freight on the lakes approximates eight-tenths of one mill per mile, and coal has been transported 900 miles for 20 cents per ton. This is due to the economical methods of loading and discharging vessels, the increased size and power of the ships employed and the character of the freight.

A CANADIAN LLOYDS.

The initial steps have been taken in another big scheme in connection with St. Lawrence navigation. Notice is given that at the next session of the Canadian parliament application will be made for an act to incorporate the "St. Lawrence Lloyds" for the purpose of carrying on an ocean and inland marine insurance business, with the right to maintain and navigate ice breaking and wreck relieving steamers on the St. Lawrence river. The idea of forming the new company arose out of the departure from Montreal in the last days of November of four steamers belonging to the Algoma Central Steamship line carrying Carnegie steel rails without any insurance. F. H. Clergue, the head of the big American syndicate which has extensive interests at Sault Ste. Marie, went down to Montreal at the time and found that no insurance could be had for his steamers and cargoes. He interviewed prominent citizens and decided that a new company should be formed. An American syndicate will join hands with Montreal financiers for the formation of a company with a capital of \$5,000,000.

A COLLISION CASE DECIDED.

The John B. Trevor-Crescent City-Manila collision case has been decided. Judge Swan of Detroit, in the United States District Court, finds the Crescent City and Manila in fault and renders a decree in favor of the Trevor. The mix-up of these occurred last season in the St. Clair river, opposite the Star Island house.

The Trevor, which is one of the whaleback steamers now owned by the Bessemer Steamship Co., was bound down with two barges in tow. The steamer Crescent City, which is known as one of the Wolvin boats but which is now owned by the American Steel and Wire Co., was also bound down. The schooner Manila, which was in tow of the steamer Maricopa, was bound up. These two latter boats are owned by the Minnesota Steamship Co.

The Crescent City crossed the tow line between the Trevor and the first of the barges which she was towing, causing the barge to collide with the Trevor, resulting in damages to the extent of \$22,000. The Manila was brought into the case on the claim that she sheered and collided with the Crescent City, forcing the latter to cross the Trevor's tow line.

Messrs. Goulder, Holding & Masten of Cleveland represented the Crescent City, and Messrs. Hoyt, Dustin & Kelley also of Cleveland looked after the interests of the Trevor and Manila.

NEW ATLANTIC STEAMSHIP CO.

Robert A. C. Smith and David C. Reid, shipowners of New York, associated with Sir William Van Horne and Charles R. Hosmer of Montreal and T. G. Fitzgibbon of Toronto, have given notice that they will apply at the coming session of the Canadian Parliament for a charter of incorporation for a new company, the title to be "The North American Mail and Steamship Company."

It is proposed to operate steamships between British and foreign ports and carry on the business of forwarding agents, ship brokers and warehousemen. The capital stock is placed at \$175,000, consisting of 1,750 shares at \$100 each, and the headquarters of the company will be in Montreal.

CONGRESSMAN HEPBURN'S attitude toward the river and harbor appropriations is a joke from the backwoods, says the Milwaukee Evening Wisconsin. Mr. Hepburn lives in an interior district, where views as to navigation are through force of necessity made to conform to the shifting sandbars of the Mississippi river, and his declaration that ships should be built in accordance with the depth of water in the harbors instead of deepening the harbors so as to admit larger ships is an antediluvian idea worthy of place in one of Mark Twain's serio-comic addresses. The assault upon the state of Michigan is another bit of Hepburn humor. Because the Sault canal, which is far more important to other states than it is to Michigan, happens to pass through a short stretch of Wolverine territory, the Iowa representative would charge the government's outlay upon the canal entirely to Michigan. It would be as rational to charge the expense of deepening the Mississippi river against a single state while all the other contiguous states enjoy the benefits of the deepened channels.

REAR ADMIRAL R. B. BRADFORD, Chief of the Bureau of Equipment, has sent to well-known mariners for criticism a proposed new compass card designed by Lieut.-Com. S. B. W. Diehl, Superintendent of Compasses, U. S. Navy, Washington, D. C. The object of the proposed change is to omit the present system of points and fractions thereof and use degrees only. We fail to see where the application of this so-called new method differs from the present custom of navigators, as regards helmsmen, there is nothing to be gained by befogging their minds by given courses in degrees, in fact, no vessels are steered to degrees, but, in working up the ship's position, degrees only have been used for the past several decades. The Naval Superintendent of Compasses must surely have something up his sleeve and which he has not as yet seen fit to bring to light.

MR. HEPBURN, member of Congress from Iowa, assailed the policy of the River and Harbor Committee in deepening the harbor to meet the draft of some ship which some freak ship builder saw fit to build. He argued that ship builders could be compelled to conform the draft of their ships to the depth of water in the harbor they were to enter, and not the harbors to the draughts of the ships. An assistant engineer in the U. S. engineer office, Cleveland, enunciated the same opinion quite recently and he was quietly squelched.

LAKE MARINE ENGINEERS' WAGES.

The following classification of steamers was made by the Marine Engineers' Beneficial Association at their national convention held at Cleveland last week, and a copy has been sent to the executive committee of the Lake Carriers' Association. The boats are placed in three classes and the wages of the chiefs run from \$105 per month to \$132. Following is a copy of the classification that was adopted:

First class—All steel steamers of more than eighteen hundred (1,800) tons, all passenger steamers of more than seven hundred and fifty (750) tons.

Second class—All steel steamers less than eighteen hundred (1,800) tons and more than five hundred (500) tons, and all wooden steamers of more than five hundred (500) tons; all passenger steamers of more than two hundred (200) tons and less than seven hundred and fifty (750) tons.

Third class—All steamers not included in first class or second class, including tugs and canalboats.

All reference to tonnage to be understood as meaning gross tons.

Crew—All first class steamers having water tube boilers and more than two boilers are to carry three engineers and two oilers, and water tenders where required.

All second class steamers of more than fifteen hundred (1,500) tons, having water bottoms or auxiliary machinery, such as electric lights, hoisting engines, etc., are to carry two engineers and two oilers.

All second class steamers of more than twelve hundred (1,200) tons, and not included in the above, are to carry two engineers and one oiler.

Following is the schedule of wages:

First class—Chief engineer, per month, \$132; first assistant engineer, per month, \$96; second assistant engineer, per month, \$84.

Second class—Chief engineer, per month, \$114; assistant engineer, per month, \$84.

Third class—Chief engineer, per month, \$105; assistant engineer, per month, \$75.

Wages for fish tugs—Large tugs \$105; small tugs \$90.

Formerly this list was made up by the Lake Carriers' Association and revised from time to time according to the season of navigation. From the foregoing it appears that the engineers have taken the subject into their own hands and candidly state what they will work for per month in the various classes of tonnage.

AN EXPERIMENTAL STEAM YACHT.

Charles R. Flint's experimental steam yacht Arrow, which is designed to beat the Parsons' turbine boats of England, is lying at a wharf in the Passaic awaiting her boilers from the Crescent shipyard at Elizabethport, and her engines from Lysander Wright's machine shop in Newark. The boat is of novel construction and designed to carry the highest power with the lightest weight and it embodies many novel features in every part.

One of the lesser features and one possessing the element of novelty is the use by hydraulic thrust bearings, invented recently by George E. Wright, a brother of Lysander Wright, Jr., the yacht engine builder, who has done most of designer Mosher's engine work for a number of years. The thrust bearings are kept apart by a film of oil or other liquid under high pressure from hydraulic pumps, operated by the rotation of the shafts upon which the bearings work.

The two boilers are of the curved water-tube type, placed fore and aft, and fed from between them, having an inspection certificate for 440 pounds to the square inch and a capacity to supply 4,000 horse-power to the main engines and steam besides for pumps and auxiliary engines for lighting and other purposes. The main engines are quadruples, with cylinders 11, 17, 24 and 32 inches in diameter and ingenious reheating system of copper tubing between each cylinder. All of the parts of the engines which admit of the practice have been bored out to the last degree consistent with strength, this principle having been applied to both the frame and working parts.

The Arrow is built so that it can be converted into a torpedo boat in a few days and the speed expected is 45 knots an hour. Aluminum reinforced with steel is used wherever possible and every ounce is saved by the use of aluminum in internal fittings, including galley furniture. The hull of the vessel is constructed of two thicknesses of light mahogany with painted canvas between the layers, and the paint used is supposed not to dry out.

The length of the Arrow is 130 feet 4 inches over all and only four inches less on the water line. Her beam measurement is 12 1/2 feet and her extreme draught will be about 4 feet 7 inches. The displacement will be about 68 tons under normal draught.

ANNUAL VOYAGE, MASTERS AND PILOTS OF STEAM VESSELS.

Pursuant to an order issued by John C. Silva, Grand Captain of the Grand Harbor of the American Association of Masters and Pilots of Steam Vessels convened in Washington, D. C., January 21st, 1901, the following named Grand Harbor officers, Past Grand Captains and Representatives answered to call of the roll: Capt. John C. Silva, Grand Captain; Capt. John T. Fowler, First Pilot; Capt. Ben. M. Merrieles, Second Pilot; Capt. Benj. F. Perkins, Captain's Clerk; Capt. Luther B. Dow, Purser; Capt. P. A. W. Griffin, Representative Harbor No. 1; No. 2, Capt. N. L. Cullen; No. 3, Capt. W. S. Vankeuser, P. G. C.; No. 4, Capt. W. S. Durkee, P. G. C.; No. 5, Capt. John H. Pruitt; No. 6, Capt. J. L. Seaman; No. 7, Capt. Ulster Davis; No. 8, Capt. W. A. Mears; No. 10, A. W. Halsey; No. 11, Capt. Irving P. Grace; No. 13, Capt. F. A. Champlain; No. 14, Capt. M. L. Spedden; No. 18, Capt. A. M. Halladay; No. 21, Capt. Chas. H. Wells; No. 26, Capt. Ben. M. Merrieles; No. 29, Capt. C. C. Townsend; No. 31, Capt. W. C. Robertson; No. 36, Capt. M. P. Usina; No. 40, Capt. Chas. Maytham; No. 41, Capt. M. J. Halloran; No. 42, Capt. Lee T. Brogan; No. 43, Capt. Geo. E. Hardy; No. 44, Capt. A. C. Majo; No. 46, Capt. James Montgomery; No. 47, Capt. R. W. England.

A large amount of business was presented by the representatives from the different subordinate harbors which was referred to the proper committees and taken care of. This business relating to improvement of the rivers and grievances against certain bridges, was placed before the War Department. Business concerning light-houses and buoys was placed before Light-House Department, and we were assured that all matters would receive due consideration. A committee waited upon the Board of Supervising Inspectors and asked them to make a few changes in the rules and laws, which, if made, would prove of great benefit to the licensed officers and their employers. The Secretary of the Treasury's attention has been called to the constant violation of the custom laws in Alaskan waters and on Behring Sea, and an investigation will be made of the charges made. There has been a large increase in membership during the past year, largely due to the protection afforded the members of this association, licensed officers who are members and who desire information would do well to consult with the officers of their Harbor, or the Grand officers also will always be pleased to answer all questions asked. This association will publish March next, the Log of the annual voyage, together with a full account of what has been done during the past year in protecting our members by counsel and the Grand Executive Committee.

The friendly relations existing between the association and the steamboat inspection service, the head of every department and Congress in Washington, has brought about many changes of great benefit to its members and every licensed deck officer who is not a member.

One of the most important departments in Washington, D. C., is the steamboat inspection service, who gave their best efforts to improve the service, and who gave the suggestions of the members of marine engineers and this association careful consideration.

The Grand Harbor officers elected for the year 1901 are: Capt. John C. Silva, Grand Captain, Boston, Mass.; Capt. M. P. Usina, Grand First Pilot, Savannah, Ga.; Capt. Chas. Maytham, Grand Second Pilot, Buffalo, N. Y.; Capt. Ben. F. Perkins, Grand Captain's Clerk, Camden, N. J.; Capt. Luther B. Dow, Grand Purser and Counsel, Brooklyn, N. Y.

The next annual voyage will be held in Washington, D. C., Jan. 1902, day and date to be named by the Grand Captain. The Grand Harbor adjourned sine die Jan. 26th, having been in session 6 days.

AN INDIANA CANAL THIS TIME.

Corporations and individuals owning property valued at several million dollars are interested in the passage of a bill in the Indiana Legislature providing for the building of a canal from Lake Michigan at East Chicago to the Calumet river and for the dredging of Calumet river at Hammond. The water way will be nearly three miles in length and will cost probably \$2,000,000 or \$3,000,000.

The waterway is as large as the Chicago drainage canal and will open for factory and warehouse buildings several thousand acres of land now practically valueless. If the canal is built a large number of factories will come to Indiana. This bill has no connection with the Hammond harbor bill, presented at the last session.

CAPT. A. B. WOLVIN.

Capt. A. B. Wolvin, of Duluth, who was elected president of the Lake Carriers' Association at its recent annual meeting in Detroit is one of the strongest figures in the maritime community of the Great Lakes. He has been regarded as a presidential possibility by the members of the Lake Carriers' Association for a number of years.

This is the first time that Duluth has been honored by the presidency. The new president of the Lake Carriers' Association is regarded as one of the most enterprising and resourceful men in the lake transportation business, and during the past ten years has developed into a conspicuous and successful vesselman, with a reputation for aggressiveness combined with fairness to all interests affected.

Capt. Wolvin started sailing when he was 12 years old as cabin boy on the *Dean Richmond*, of which his father was captain. His first boat was the steamer *Annie Smith*, which he sailed in 1879, and he also commanded the *Swain*, the *Raleigh* and *City of Rome*. He quit sailing in 1882 when his parents died, but returned to the lake business in 1889 as vessel agent with the late Capt. F. N. La Salle of Duluth the firm being known as *La Salle & Wolvin*. He is the manager of the American Steel & Wire Co.'s fleet of vessels, which includes the big 500 footers *John W. Gates*, *J. J. Hill*, *I. L. Elwood* and *William Edenborn*. He is also president of the Superior Ship Building Co., Duluth manager of the Great Lakes Towing Co., agent for the Western Transit Co., and is associated with J. J. Hill of the Great Northern in the construction of the two great steamships now building at New London, Conn.

A HANDSOME FULL MODEL OF A WAR-SHIP.

Probably the most magnificent full model ever built has just been finished in the model room at Cramps' yard, Philadelphia. It is a perfect counterpart of the record-breaking Russian cruiser, *Variag*, and aside from the fact that it is a correct reproduction in the most minute detail, it is really as much of a work of art as the great cruiser herself.

The model was made directly from the working drawings from which the cruiser was built, the scale maintained being 1-16 of an inch for every foot. Every detail has been carefully reproduced, the model cruiser apparently only lacking a midget crew to go into action. The hull is perfectly fashioned, the great knife-like bow and beautifully covered stern being even more apparent when viewed in the model than in the big ship.

Model boats, four inches long, each equipped in regulation style, occupy the miniature davits, and every gun is perfectly represented by a carefully wrought steel miniature, which has every working fixture of breech and elevation of gear. Other "cannon" with bodies as long as a thumb nail are in the bows of the two steam launch models that lie snugly in their chocks under the gear of the big hoisting cranes.

Bulwarks are produced in polished steel wire and even the hatch gratings are true to life, being of wood latticed in the regular fashion. In the fighting top are baby guns that are exactly like full grown, spiteful articles that grin over the *Variag*'s top shields. The running rigging is reproduced to the smallest brace and halliard.

It cost a sum running well into the thousands to build this magnificent model, and ere the *Variag* steams away it will be presented to the officers, who in turn will probably send it as a fitting present to the czar.

EASTERN FREIGHT REPORT.

Messrs. Funch, Edye & Co., New York, report the condition of the eastern freight market as follows:

There is great dullness prevailing in this market. Tonnage has been seeking employment in increased volume and as there appear to be no pressing shorts in the market, fixtures can only be effected on the basis of existing orders. For full cargoes of grain the rates have been governed mainly by the fixturers obtainable on the berth, and as regular line vessels are much in need of cargo, these rates have reached a lower basis than for some time past. Cotton business is being entirely neglected and shippers are now taking 32s. 6d. from the Atlantic coast, whilst the Gulf ports, although showing a fair amount of business, have been able to obtain vessels at continually declining figures. Timber freights are particularly neglected owing to the inability on part of merchants to make sales abroad.

Sail tonnage has shown less animation than of late and rates in all directions are somewhat easier, except for vessels suitable for general cargo to the Colonies and case oil to the Far East, which hold their own.

PORTAGE LAKE CANALS.

Major Clinton B. Sears, Corps of Engineers, U. S. A., stationed at Duluth, gave out his report of the commercial statistics of the Portage Lake ship canals for the season of 1900. The development of freight tonnage through this artery of commerce is one of the most interesting and important features of Lake Superior navigation. In 1892, which was the first year that commercial statistics were furnished to the government, the freight tonnage of the Portage Lake ship canals was only 138,515 tons, and the number of vessels reported as using the canals was 568. As compared with that, the freight tonnage of the canals in 1900 was 1,867,772 tons, and the number of vessels was 4,020, of which 3,153, were steamboats.

The valuation of the freight passing through the canals in 1900 was \$57,380,129, the largest items being: Bituminous coal, \$2,650,292.70; flour, \$1,249,406.25; copper, \$25,672,380; lumber, \$3,517,262; unclassified freight, \$22,363,700; building stone, \$423,020; and grain, other than wheat, \$365,629. The iron ore carriers, apparently, do not use the Portage Lake canals to any great extent, less than 60,000 tons being reported.

The improvements to the Portage Lake ship canals have been done under the direction of Major Sears, and are about completed. Boats can move with confidence upon a draft equal to that afforded in the Sault river. The advantage of the canals is that they afford a shorter route between Duluth and the Sault. Considerable distance is cut off, as compared with the usual all-lake route around Keweenaw point. But before the canals were improved by deepening, straightening and widening, and by good markings, the saving in distance did not compensate for the loss of time for the larger class of boats.

LAUNCH OF THE METEOR.

The steel steamer *Meteor* was successfully launched at Craig's shipyards on Tuesday afternoon. The vessel was built under contract for the Hawgood Navigation Co. of Cleveland, and will be most handsomely appointed throughout. She is 260 feet long, 43 feet beam, and 27 feet deep. The *Meteor* draws two feet forward and nine feet aft, and will carry 3,000 tons. Her draft is eighteen feet, and she is nearly as wide as is permitted to pass through the Welland canal.

The Craig Ship Building Co. will soon begin work on a large vessel for the United Fruit Co. of Boston.

NOTICE TO MARINERS.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 9TH DIST.,
CHICAGO, ILL., January 28, 1901.]

LAKE MICHIGAN, GREEN BAY AND STURGEON BAY LIGHTS AND FOG SIGNALS DISCONTINUED DURING THE WINTER.

Notice is hereby given that on and after February 1st, 1901, the following lights and fog signals will be discontinued in these waters until the opening of navigation in the spring of 1901.

Cana Island, Porte des Morts (Pilot Island), Plum Island and Pottawatomie light-stations in Lake Michigan; Chambers Island, Menominee Pierhead, Green Island and Sherwood Point, Green Bay, and at Northwest entrance No. 5, Northwest entrance to cut, No. 4, Sturgeon Bay canal, and on Dunlap Reef, Sturgeon Bay.

By order of the Light House Board.

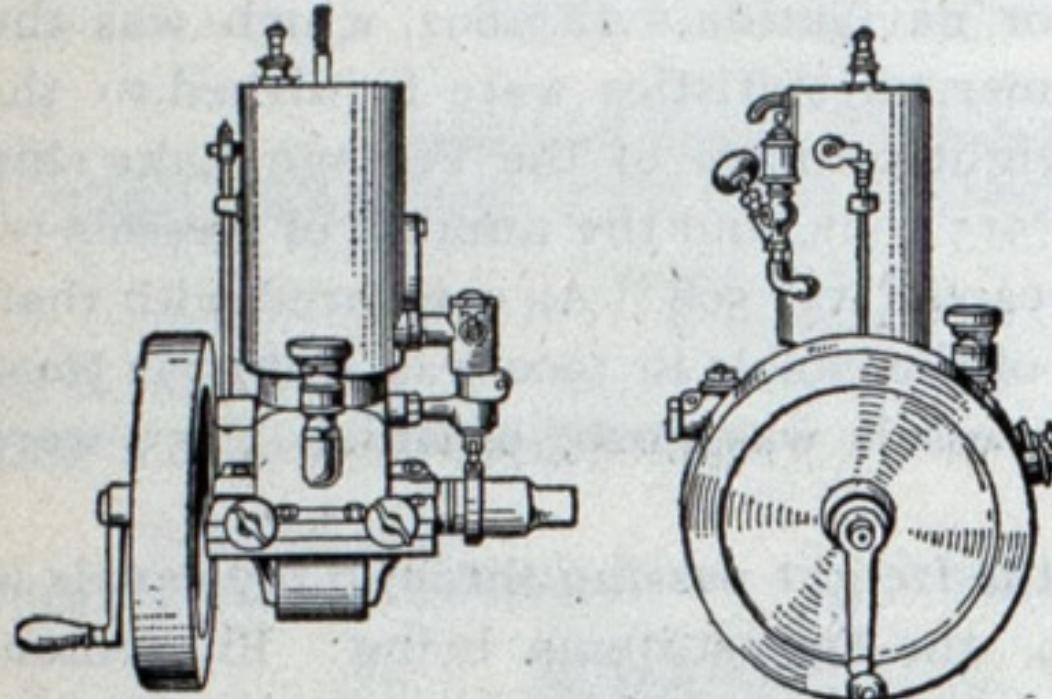
F. M. SYMONDS, Commander, U. S. Navy,
Inspector 9th L. H. District.

A COLLISION CASE.

A lawsuit growing out of the Santiago-Fontana collision at Port Huron August 3, is being heard by Judge Swan in the United States Court at Detroit. Messrs. Hoyt, Dustin & Kelly and Shaw and Cady will represent the libelants, who ask the owners of the *Inter-Ocean*, Appomatox and *Santiago* for \$90,698.

The steamer *Inter-Ocean* is owned by Capt. Peter Wex, of Buffalo, and Henry W. Watson her manager. The St. Clair Steamship Co., which lost the *Fontana*, makes claim that it was an attempt of the *Inter-Ocean* to pass the *Santiago* which caused that schooner to sheer and go into the *Fontana*. Messrs. Goulder, Houlding & Masten, of Cleveland, will defend the case, the outcome of which is of especial interest to underwriters, owners and masters, as the *Fontana* wreck was one of the most interesting of the entire season.

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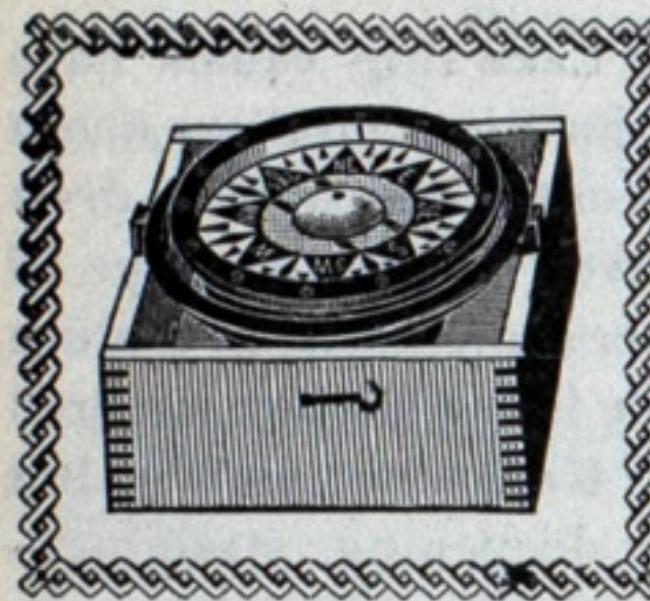
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BRITISH AND FOREIGN SHIPBUILDING IN 1900.

During 1900, exclusive of war ships, 692 vessels of 1,442,471 tons gross (viz., 664 steamers of 1,432,600 tons and 28 sailing vessels of 9,871 tons) have been launched in the United Kingdom. The war ships launched at both Government and private yards amount to 29 of 68,364 tons displacement. The total output of the United Kingdom for the year has, therefore, been 721 vessels, of 1,510,835 tons. These totals are analyzed in the tables which are given below, but the following notes will also be of interest. In these notes, war ships are excluded from consideration except where they are specially mentioned.

Comparing the present returns with those for the past two years, it will be seen that the tonnage launched in 1898 and 1899 was less by 75,000 tons and 26,000 tons, respectively, than that launched in 1900. As regards war vessels, the figures for 1900 are less than those for 1899 by 100,000 tons.

The output of 1900 is almost entirely composed of steam tonnage. In 1889, 10 per cent. of the output was composed of sailing tonnage. For the four following years (1890 to 1893), the proportion rose to 19 per cent. After that period, the construction of sailing vessels rapidly declined, until in 1899 sailing tonnage formed less than 0.14 per cent. of the output. During 1900 there has been some recovery, and the percentage of sailing tonnage now stands at 0.7 per cent.

As regards the material employed for shipbuilding purposes in 1900, it is found that over 99.1 per cent. of the tonnage has been built of steel and less than 0.8 per cent. of iron. The iron tonnage is practically made up of trawlers, and comprises no vessel of more than 240 tons.

Of the total output, 1,102,551 steam tons and 6,614 sailing tons, or 1,109,165 tons in all (nearly 77 per cent.) belong to ports in the United Kingdom. In this connection, it may be noted that the losses, etc., of United Kingdom vessels during twelve months are shown by Lloyd's Register Wreck Returns to average 282,000 tons (206,000 steam, 76,000 sail). Sales to foreign and colonial owners for the twelve months ended November, 1900, reached the large total of 677,000 tons (562,000 steam, 115,000 sail). On the other hand, purchases from foreign and colonial owners during the same period amount to 69,000 tons (57,000 steam, 12,000 sail). The sailing tonnage of the United Kingdom would thus appear to have decreased by about 172,000 tons, while the steam tonnage has increased by 392,000 tons. The net increase of United Kingdom tonnage during 1900 is therefore about 220,000 tons. This figure exceeds the similar estimates for 1896 and 1897 by 3,000 tons and 172,000 tons, respectively, but is less than the estimates for 1898 and 1899 by 107,000 tons and 93,000 tons, respectively.

Over 23 per cent. of the total output has been built to the order of foreign and colonial shipowners in 1900, as compared with 19 per cent. in 1899, 22 per cent. in 1898, and 25 per cent. in 1897. As was also the case in 1899, Germany

has this year provided the largest amount of work for British shipbuilders, 25 vessels of 103,625 tons (nearly 7.2 per cent. of the total output) having been built for that country. Austria-Hungary follows with 25 vessels of 80,429 tons. Next comes Holland with 24,403 tons; France with 21,034 tons, and Spain with 19,038 tons.

The annual shipbuilding statistics of Lloyd's Register during recent years have illustrated the steady tendency towards the construction of vessels of large tonnage. In 1892, 37 steamers were launched in the United Kingdom of 4,000 tons and above; in 1895, 50; in 1898, 83; and in 1900 the number has risen to 125. Among these last are eight vessels exceeding 10,000 tons, viz:

	Tons gross.	Tons gross.	
Minnehaa	13,403	Vaderland	11,899
Runic	12,482	Zeeland	11,899
Suevic	12,482	Tunisian	10,576
Commonwealth	12,097	Devonian	10,418

The largest sailing vessel launched in the United Kingdom during 1900 was the Nonpareil, 1,982 tons (since lost).

Of the principal shipbuilding centers of the country, Newcastle takes the lead, showing an output of 265,142 tons. Then follow in order Glasgow (262,596 tons), Sunderland (244,371 tons), Greenock (181,635 tons), Middlesbrough (144,164 tons), Hartlepool (140,623 tons), and Belfast (127,058 tons). In war ship tonnage the leading ports stand thus: Barrow (27,470 tons), Newcastle (19,040 tons), and Glasgow (13,280 tons).

The returns for the year under review include 159 steam trawlers and other fishing vessels; 30 dredgers, barges, etc.; 19 yachts; 13 tugs; 4 vessels intended to carry oil in bulk; and other vessels designed for special service.

As regards the movements of the shipbuilding industry during the course of 1900, Lloyd's Register Returns show that, irrespective of war ships, the total tonnage under construction in the United Kingdom on the 31st December, 1900, was less than that under construction twelve months previously by about 36,000 tons, or 2.7 per cent. At the close of 1899, 1,306,751 tons (1,297,497 steam, 9,254 sail), were being built. The returns for the March and June quarters of 1900 showed a reduction of about 43,000 tons, and the returns for the September quarter a reduction of about 102,000 tons, on the December figures. At the present time 1,269,919 tons (1,256,119 steam, 13,800 sail) are under construction in the United Kingdom. The highest figures recorded in the history of the shipbuilding industry occurred in December, 1898, when 1,401,087 tons were reported to be under construction. Compared with these figures, there is at the close of 1900 a reduction of work in hand to the extent of 130,000 tons. It should be added that the warship tonnage under construction in the country reached in March, 1900, a higher total than any that has previously been recorded by Lloyd's Register. Seven years ago it stood at 95,000 tons displace-

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Winter
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A small book of about 32 pages, containing alphabetically arranged lists of steam and sail vessels, also tugs, showing where each one is located for the winter. This little booklet may be had by enclosing 10 cents in stamps to

The Marine Record Publishing Co.

WESTERN RESERVE BUILDING,
CLEVELAND, OHIO.

ment. In June, 1899, it reached 452,000 tons; in December, 1890, 423,000 tons; and in March, 1900, 454,000 tons. Now it stands at 390,000 tons.

Attention is drawn to the statistics given in table V., from which it appears that there have been built abroad, during the year, 347 steamers of 602,989 tons and 325 sailing vessels of 258,703 tons, in addition to 70 war vessels of 192,000 tons displacement. Among foreign countries, the three leading places are held by the United States of America (333,500 tons), Germany (205,000 tons) and France (117,000 tons).

Of the mercantile tonnage reported from the United States, a considerable proportion does not affect the general commerce of the world, being intended for service on the Great Lakes. As showing the size of vessels employed in that trade, it may be mentioned that nineteen steamers have been built for it during 1900, of upwards of 4,000 tons each, besides two steel sailing barges of 5,000 tons each. On the coast seven steamers of over 4,000 tons each (six of them to be classed by Lloyd's Register), one steel sailing vessel of 2,292 tons, and eight wooden sailing vessels of over 2,000 tons each, were launched in 1900. It is worth noting that among these wooden vessels is the largest seagoing sailing vessel built in the world during 1900, viz., the "Eleanor A. Percy." She is a six-masted schooner, built at Bath, Me., and her tonnage is approximately given as 3,400 tons.

Germany has launched the Deutschland, of 16,502 tons, which is the largest vessel launched in the world during the year, besides four other steamers of 10,000 tons and over.

In France, the construction of large steel sailing vessels has continued to flourish under the influence of the bounties granted by the State. Thirty-eight such vessels, of 2,000 tons and upwards, have been launched during the year under review. The largest of these are the Marthe and the Valentine, of 3,250 tons each. Both have been built near Rouen, under the supervision of Lloyd's Register. No expansion is noticeable in the construction of steamers in France.

In Italy, the mercantile output of the year has increased to 67,500 tons. There is, however, some reduction in the tonnage on the stock in Italy now as compared with twelve months ago. In December, 1899, the tonnage in hand amounted to 107,000 tons; it has since fallen to 87,000 tons.

If to the figures in table V. be added those for the United Kingdom, as given in the preceding tables, the total output of the world during 1900 (exclusive of war ships) appears to have been about 2,304,000 tons (2,036,000 steam; 268,000 sail). Lloyd's Register Wreck Returns show that the tonnage of all nationalities totally lost, broken up, etc., in the course of twelve months, amounts to about 752,000 tons (358,000 steam, 394,000 sail). It will thus be seen that, while the sailing tonnage of the world has been reduced by about 126,000 tons during 1900, the steam tonnage has been increased by about 1,678,000 tons. The net increase of the world's mercantile tonnage is, therefore, 1,552,000 tons.

Compared with this net increase for the world, the net increase of 220,000 tons, as stated above, for the United Kingdom is equivalent to 14.2 per cent. In the net increase of the world's steam tonnage, viz., 1,678,000 tons, the United Kingdom has shared to the extent of 392,000 tons, or 23.4 per cent. Of the new tonnage launched during 1900, the United Kingdom has acquired over 48 per cent.

POWDERED COAL AS A FUEL.

In the Monthly Bulletin for November, 1900 (p. 1051), there is an article on "Coal Dust Briquettes," and a description of a process for their manufacture in Chicago. A Philadelphia newspaper recently noted a new appliance for the burning of coal as dust and not in the form of briquettes. On account of the strike in the coal-mining regions in the latter part of 1900, and the consequent threatened coal famine, there has been considerable experimenting with other fuel than anthracite coal by the operators of steam plants in the United States. It is a well-known fact that the use of bituminous coal causes so much smoke that many municipalities have passed ordinances prohibiting the use of soft coal. With this factor against them the users of large quantities of fuel began investigating, and discovered a machine that made pulverized coal a possible fuel of the future. It is stated that the Illinois Central Railroad experimented with this device for a week and claimed that the coal prepared by this process was the cheapest and best fuel available, being, at the same time, almost smokeless.

Appliances for firing by coal dust reduce the coal to an impalpable powder as fine as wheat flour, which, when injected through a special form of burner along with the requisite air supply, burns in the furnace like gas. Combustion, it is stated, is perfect and almost instantaneous, and the proper admixture of air is easily ascertained and registered. The volumetric analysis of samples of the escaped gas indicates that the highest possible efficiency in the use of any coal is obtained by this process. One great point in favor of the new appliance is that it may be adjusted readily, and without any appreciably extra cost, to any style or kind of boiler.

In a machine for preparing the dust the run-of-mine coal is dumped into a large hopper and fed to a crusher. If wet,

it is passed through a dryer and thence to a pulverizer. After leaving the mill the dust is carried into an air separator, where revolving fans divide the fine, flaky particles from the coarser grains, the latter being returned for regrinding.

If this process is all that is claimed, it will not only enable the mine operator to dispose of much coal that is now wasted, but will also have the effect of increasing the wages of miners, who are now paid only for the coal which can be used in furnaces.

SANTIAGO-FONTANA COLLISION.

A lawsuit growing out of the Santiago-Fontana collision at Port Huron August 3, is being heard by Judge Swan in the United States Court at Detroit. Messrs. Hoyt, Dustin & Kelly and Shaw and Cady will represent the libelants, who ask the owners of the Inter-Ocean, Appomatox and Santiago for \$90,698.

The steamer Inter-Ocean is owned by Capt. Peter Wex, of Buffalo, and Henry W. Watson her manager. The St. Clair Steamship Co., which lost the Fontana, makes claim that it was an attempt of the Inter-Ocean to pass the Santiago which caused that schooner to sheer and go into the Fontana. Messrs. Goulder, Houlding & Masten, of Cleveland, will defend the case, the outcome of which is of especial interest to underwriters, owners and masters, as the Fontana wreck was one of the most interesting of the entire season.

LOADING GRAIN AT MANITOWOC.

Before the month of January closes over one million bushels of grain will be afloat in Manitowoc's harbor. The Northern Grain Co., is loading every available boat that is in winter quarters. The barge Norton has on board 200,000 bushels of wheat and the steamer Andrew Carnegie a like amount. The Nyanza has just finished a cargo of 100,000 bushels of the same cereal. The Amazon has a cargo of 325,000 bushels of oats, the Alva a cargo of barley. The Aurora is finishing her cargo of oats at Elevator A. But few of the large Gilchrist fleet are ready to take cargoes as extensive repairs are being made on them. The steamers Tower and Ranney will be loaded this week. The balance of the Gilchrist, Wilson and Bradley fleet will be loaded as soon as needed repairs are made on them.

The boats taking cargoes are receiving one cent, the same as in Chicago for winter storage with the going freight in the spring for delivery at Buffalo.

The Yukon and Fedora, both boats having repairs made to them, will be loaded with corn the first of the month.

The loading of boats for winter storage relieves the strain on the elevators, and had twice as many vessels wintered here they could all have been loaded, but there was a lack of dockage.

The F. & P. M. steamers are making daily trips taking cargo in bulk to Ludington, and a good supply of cars in Michigan are doing much to relieve the influx of grain that is coming into Manitowoc.

It is conservatively estimated that before the opening of navigation two million bushels of grain will be afloat in Manitowoc harbor.

Admiralty.—The maritime law, and not the local law, governs in determining the liability of a city for injury to another vessel by a fire-boat owned by the city and in the custody and management of its fire department, which is negligently handled while hastening to assist in putting out a fire raging in a building at the head of a dock. Robert W. Workman, Petitioner, vs. Mayor, et al., 21 Sup. Ct. Rep. (U. S.) 212.

Government Proposals.

U. S. ENGINEER OFFICE, Galveston, Tex., January 28, 1901. Sealed proposals for building hull and machinery of self-propelling hydraulic dredge, will be received here until 2 p. m., February 28, 1901, and then publicly opened. Information furnished on application. C. S. RICHE, Capt., Engrs. 5-8

U. S. ENGINEER OFFICE, Buffalo, N. Y., January 25, 1901. Sealed proposals in duplicate for construction of concrete superstructure on breakwater at Buffalo, N. Y., will be received here until 11 a. m., February 25, 1901, and then opened. Information furnished on application. T. W. SYMONS, Maj., Engrs. 5-8

SEALED PROPOSALS will be received at the office of the Light-House Board, Washington, D. C., until 2 o'clock, p. m., March 2, 1901, and then opened, for furnishing the materials and labor of all kinds necessary for the construction and delivery of the twin-screw, steel, steam light-house tender Larkspur, in accordance with specifications, copies of which, with blank proposals and other information, may be had upon application to this office, or at the office of the Light-House Inspector, Tomkinsville, N. Y. F. J. HIGGINSON, Rear Admiral, U. S. N., Chairman. 5-6



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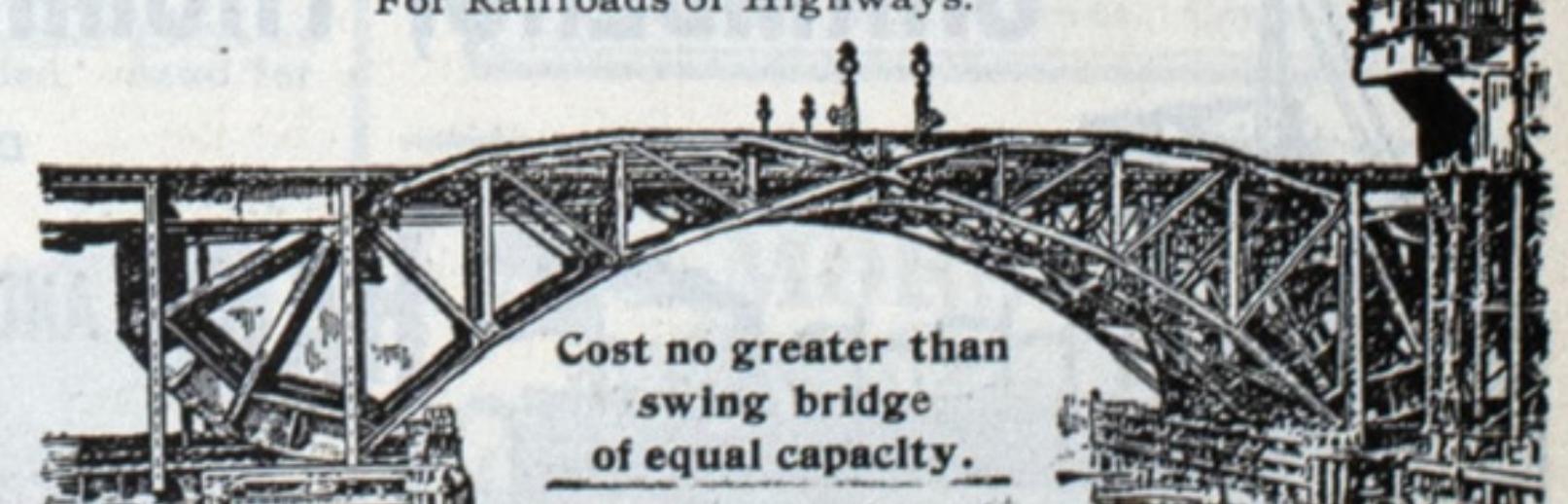
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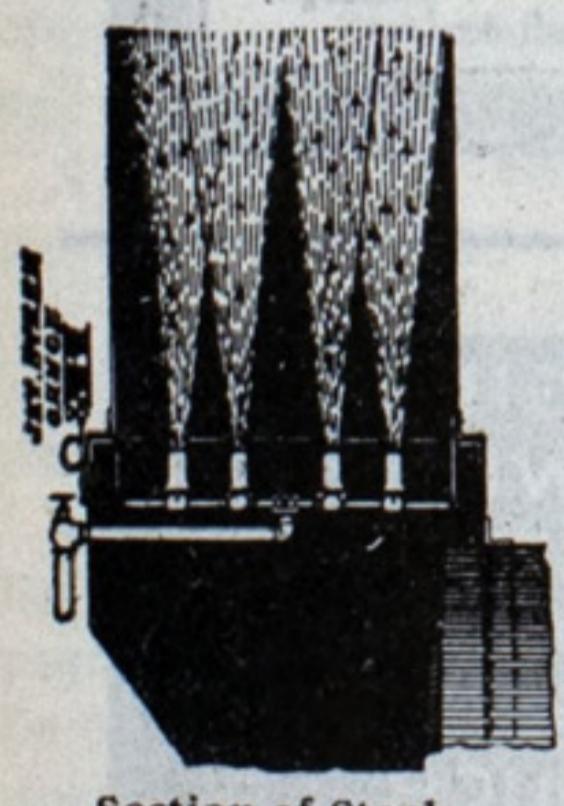
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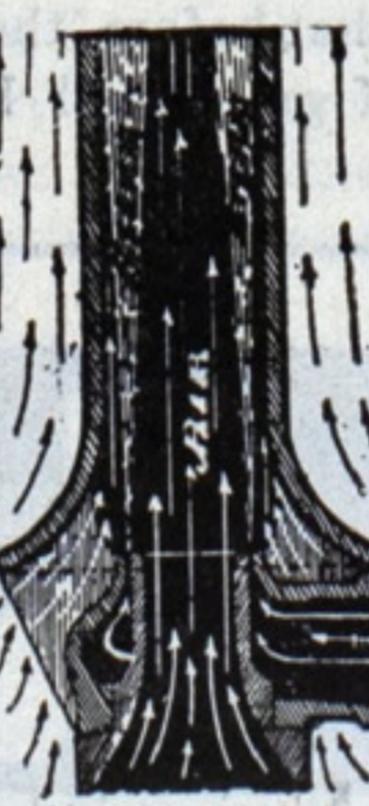
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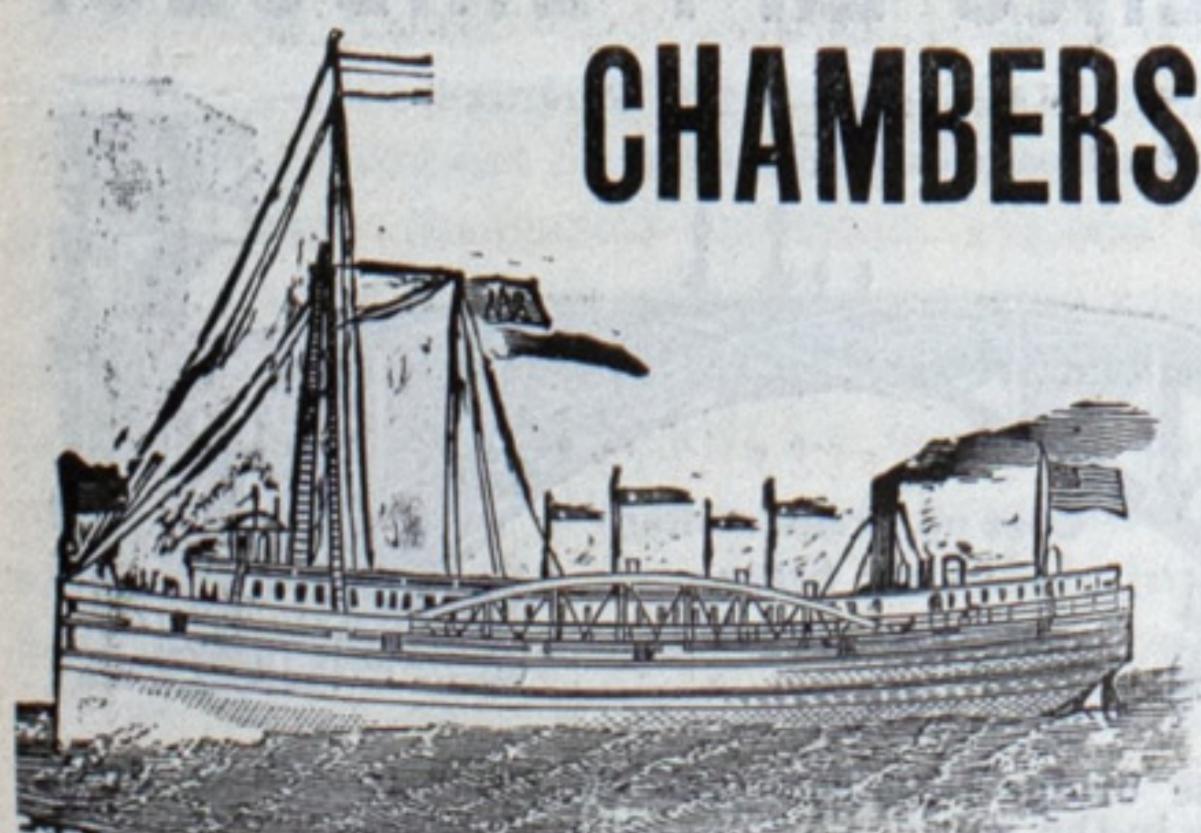
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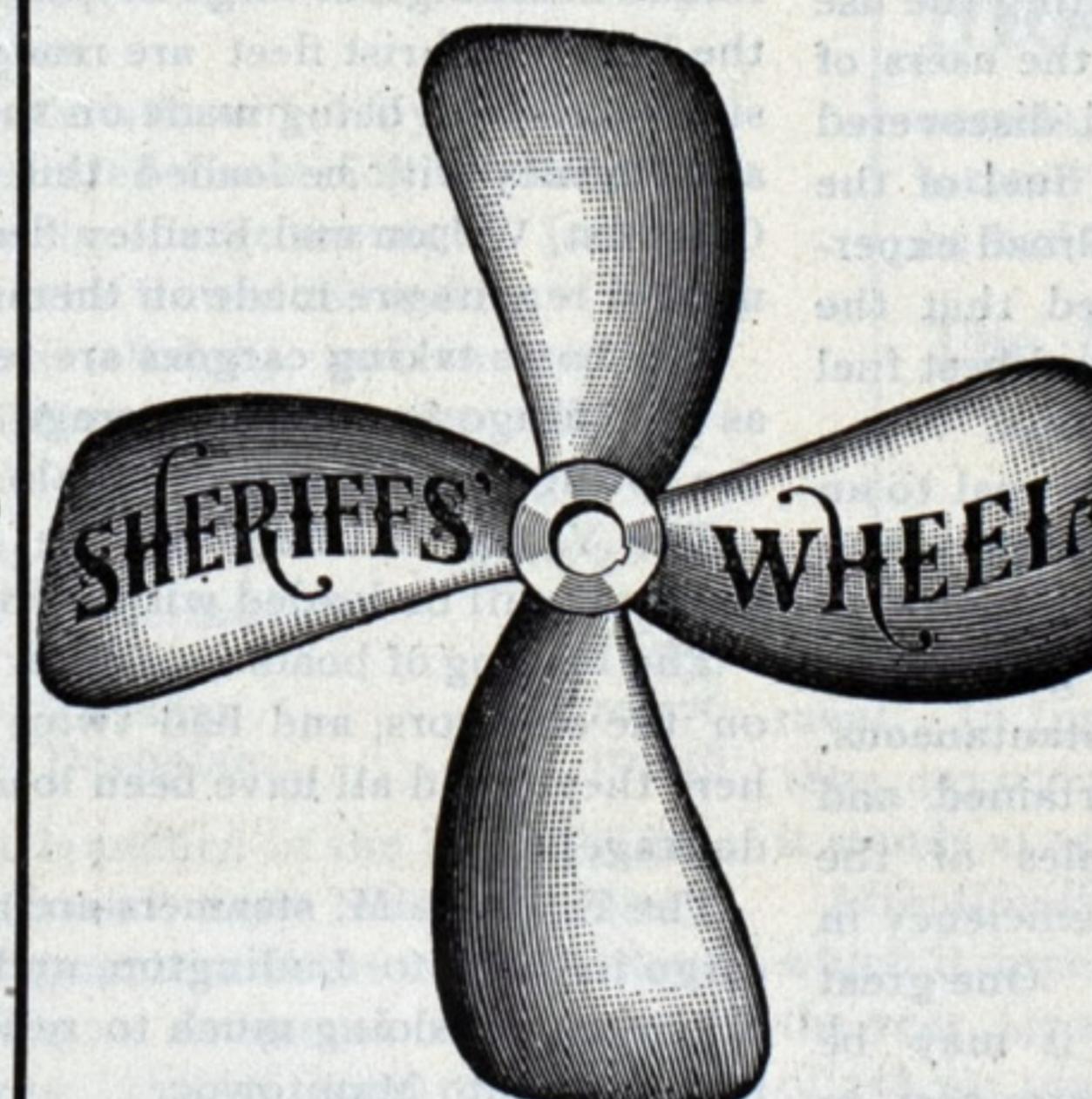
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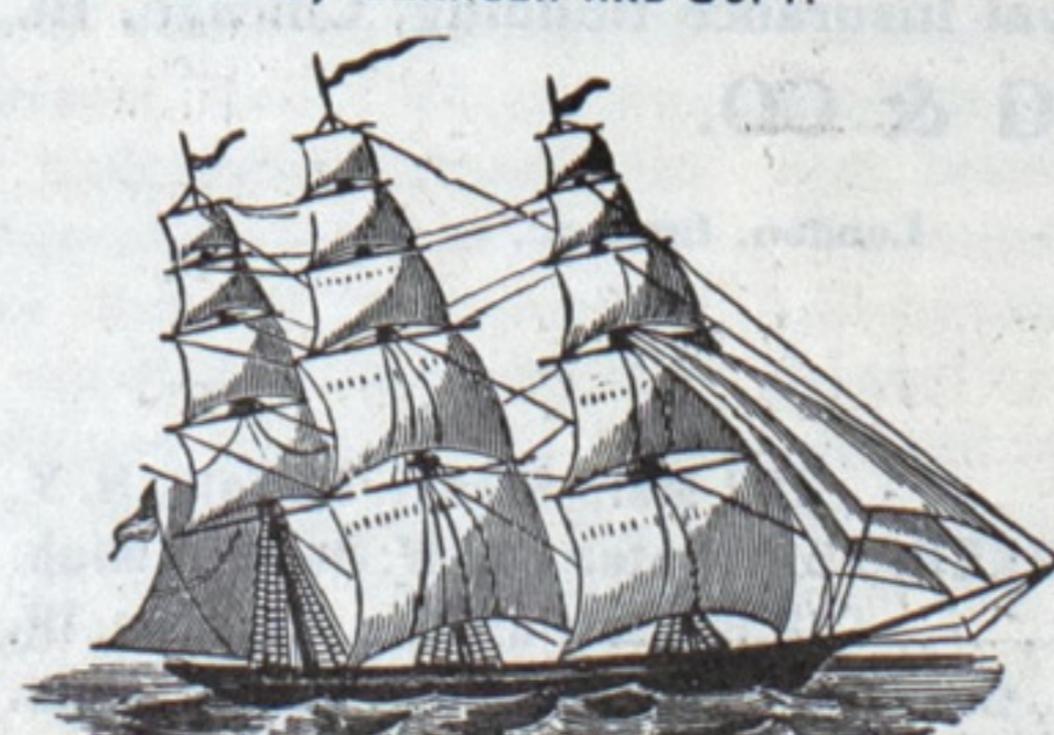
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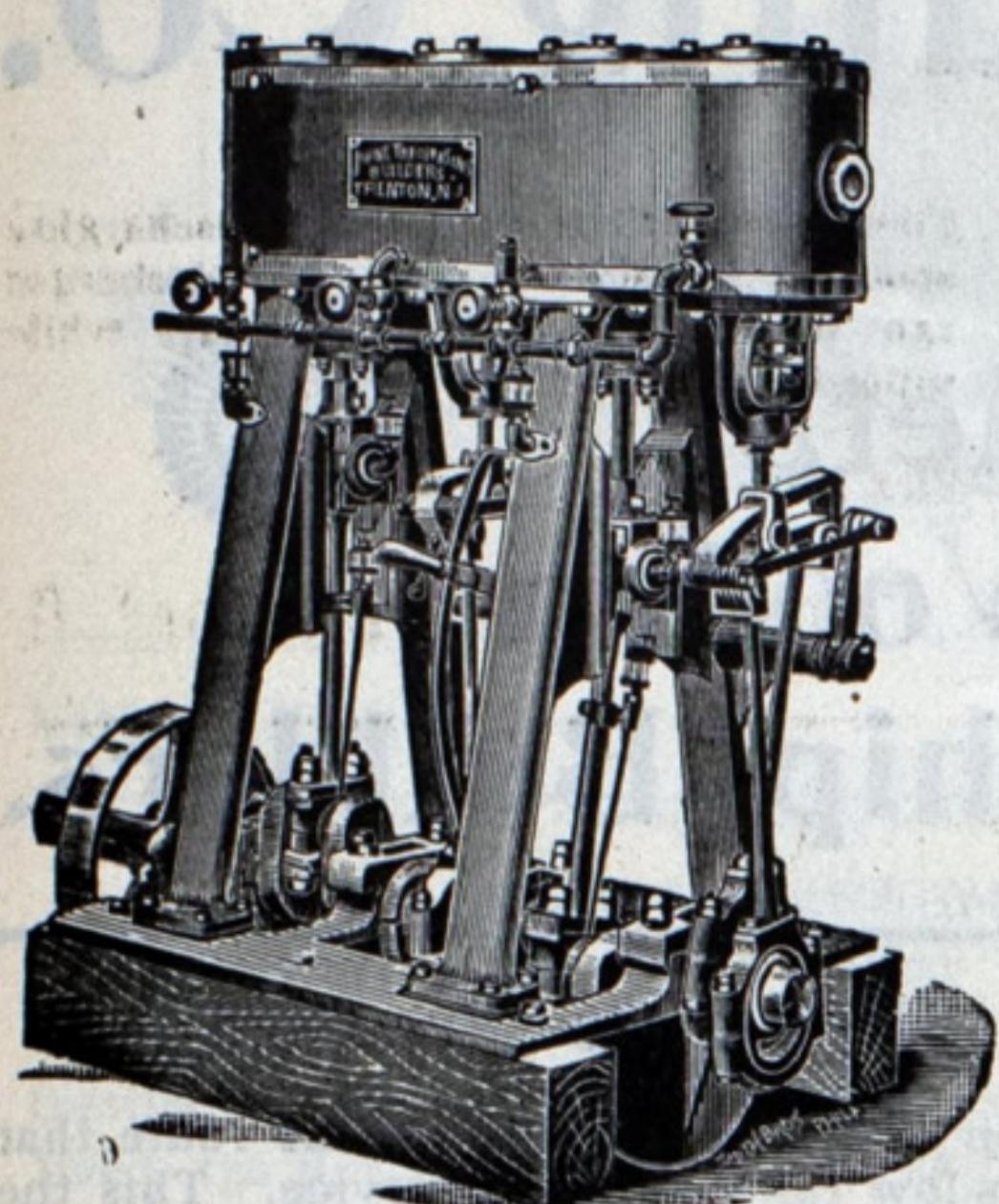
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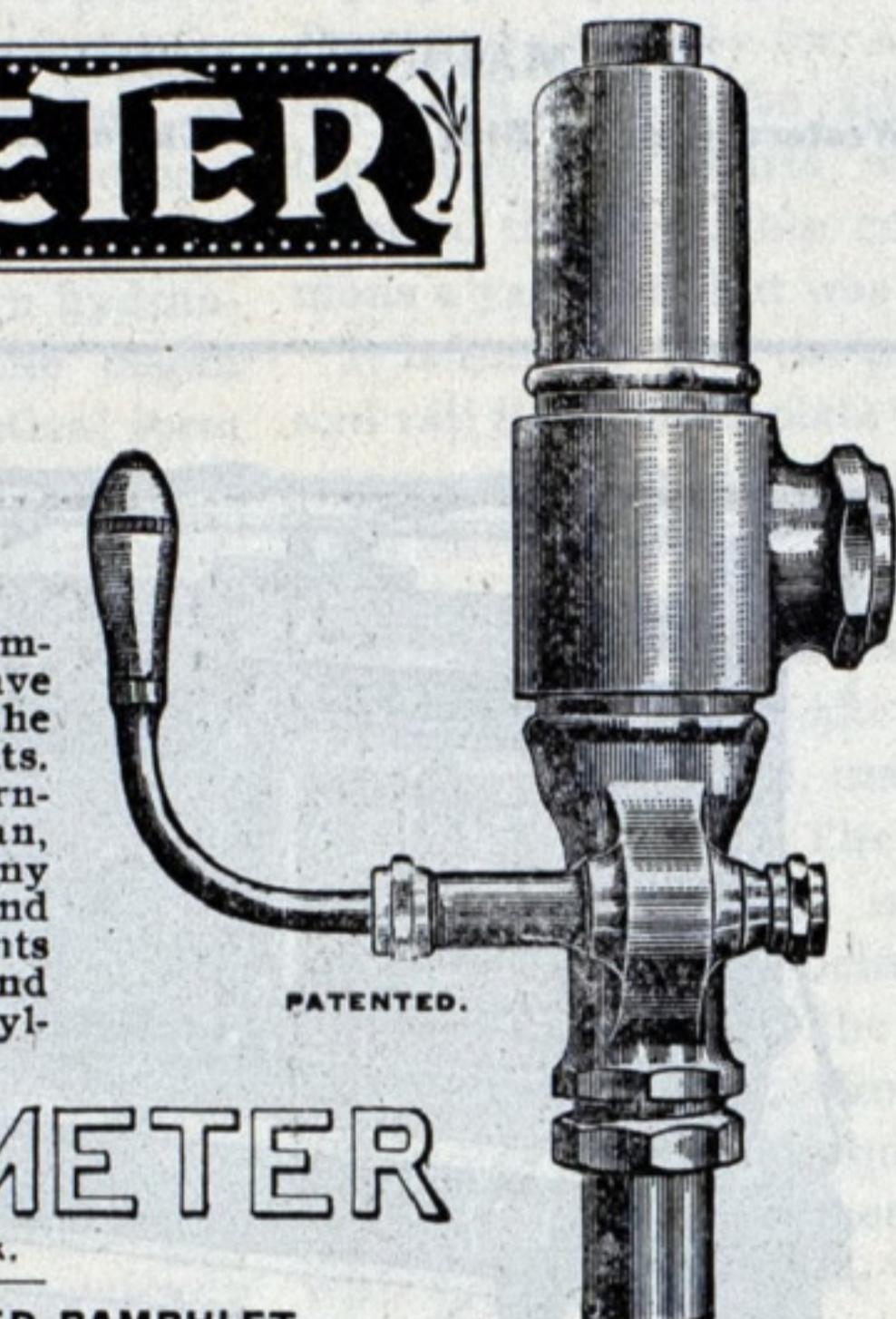
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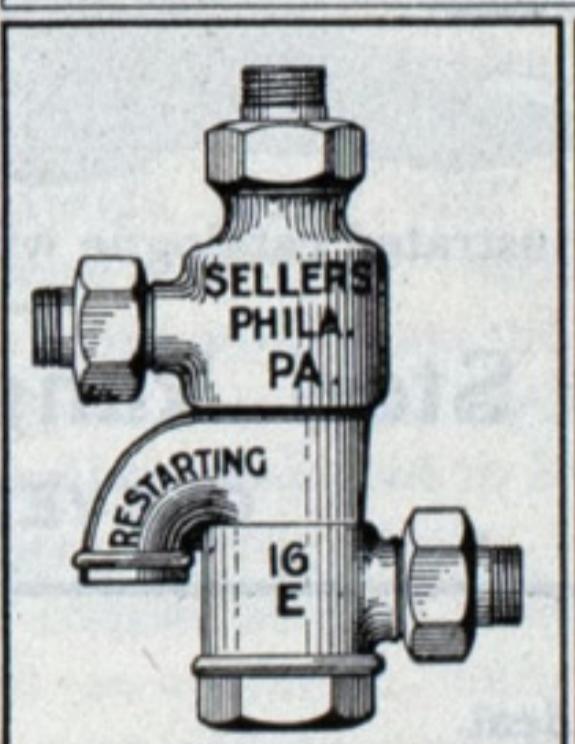
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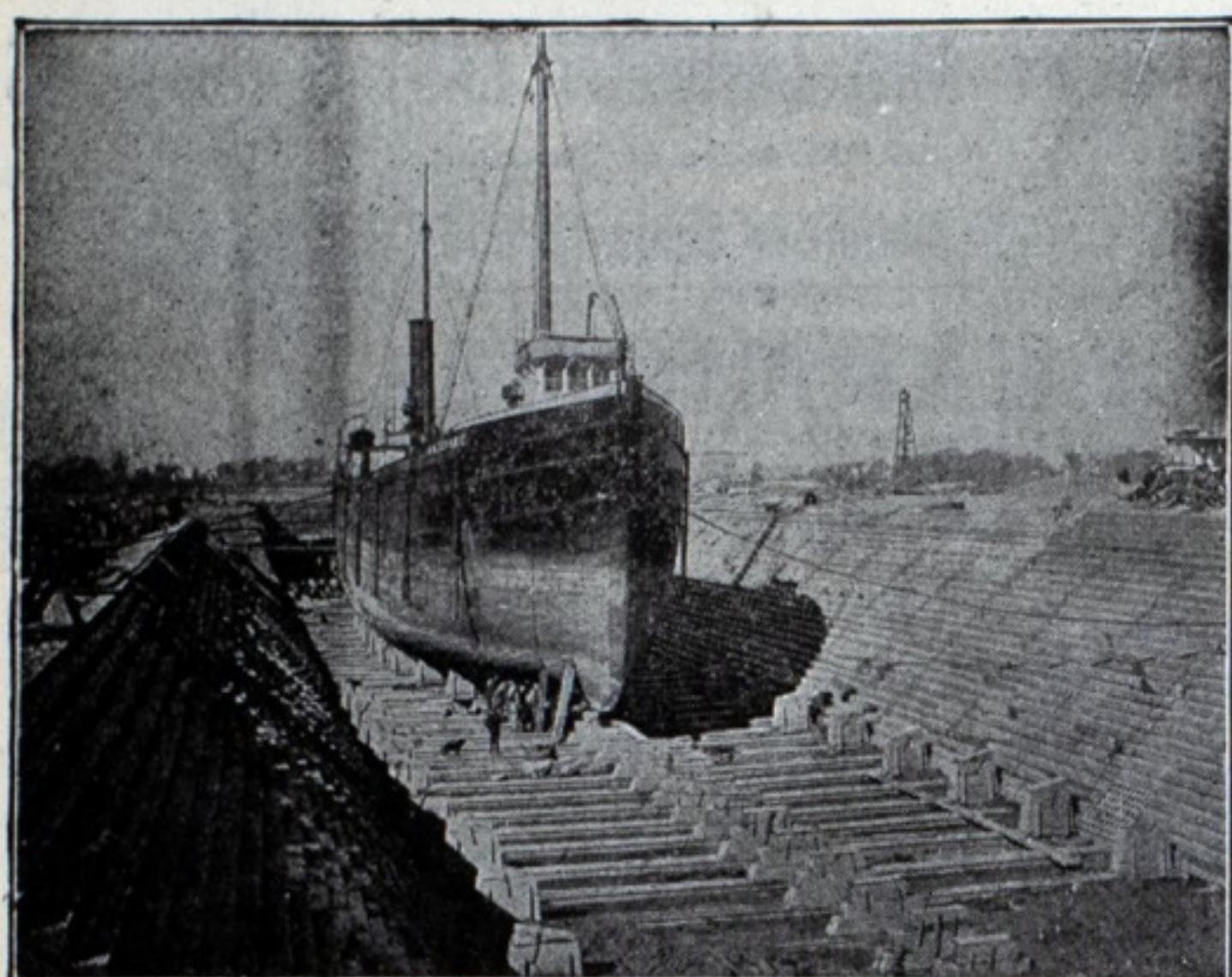
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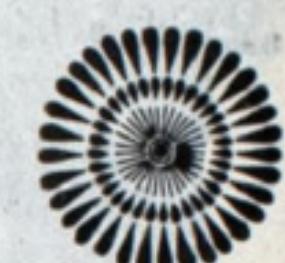
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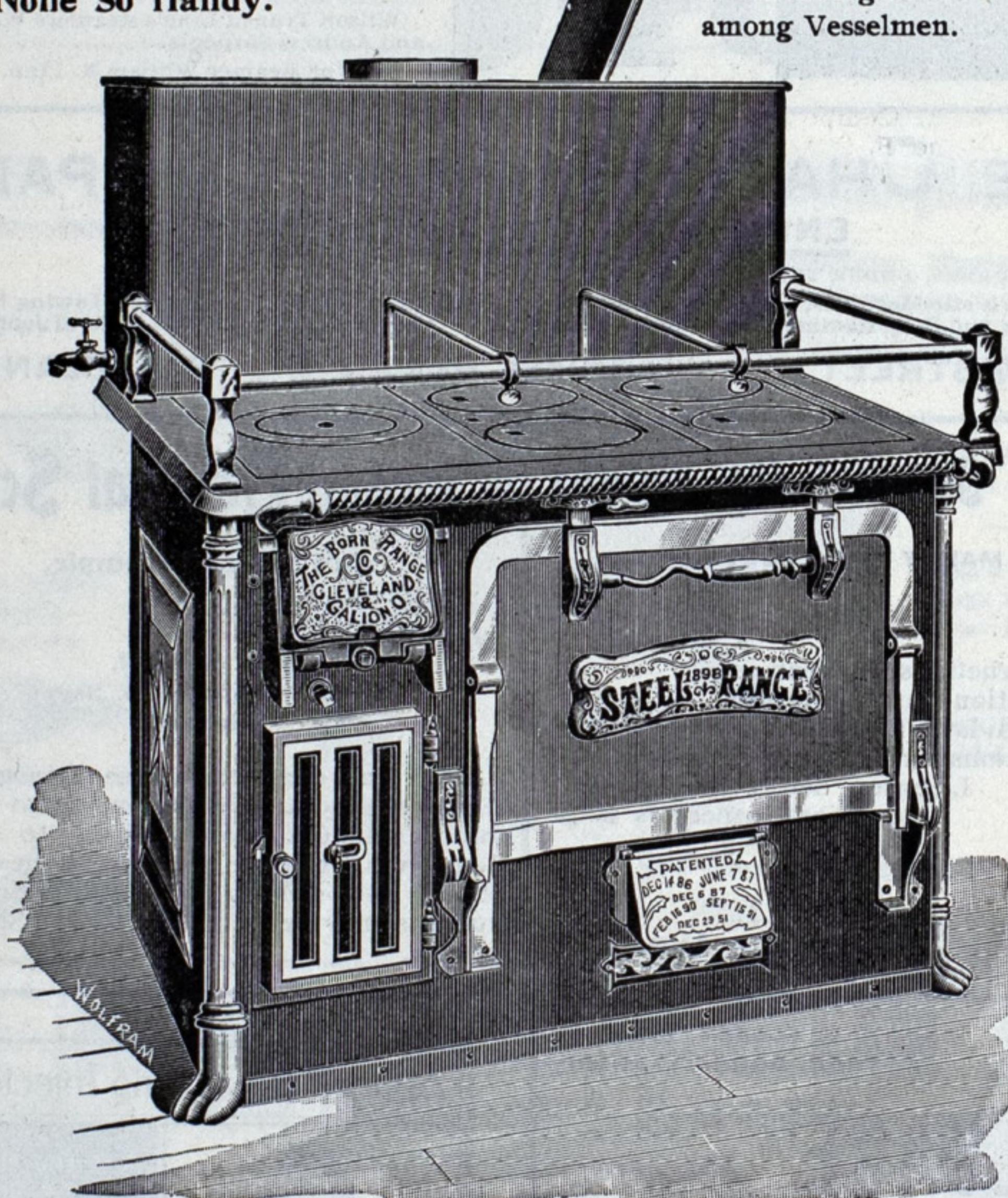
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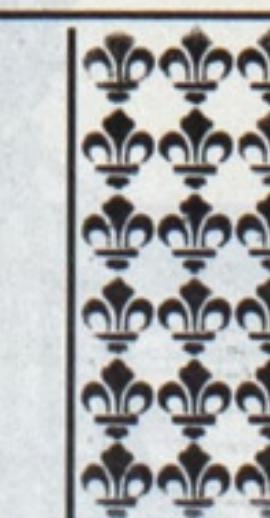
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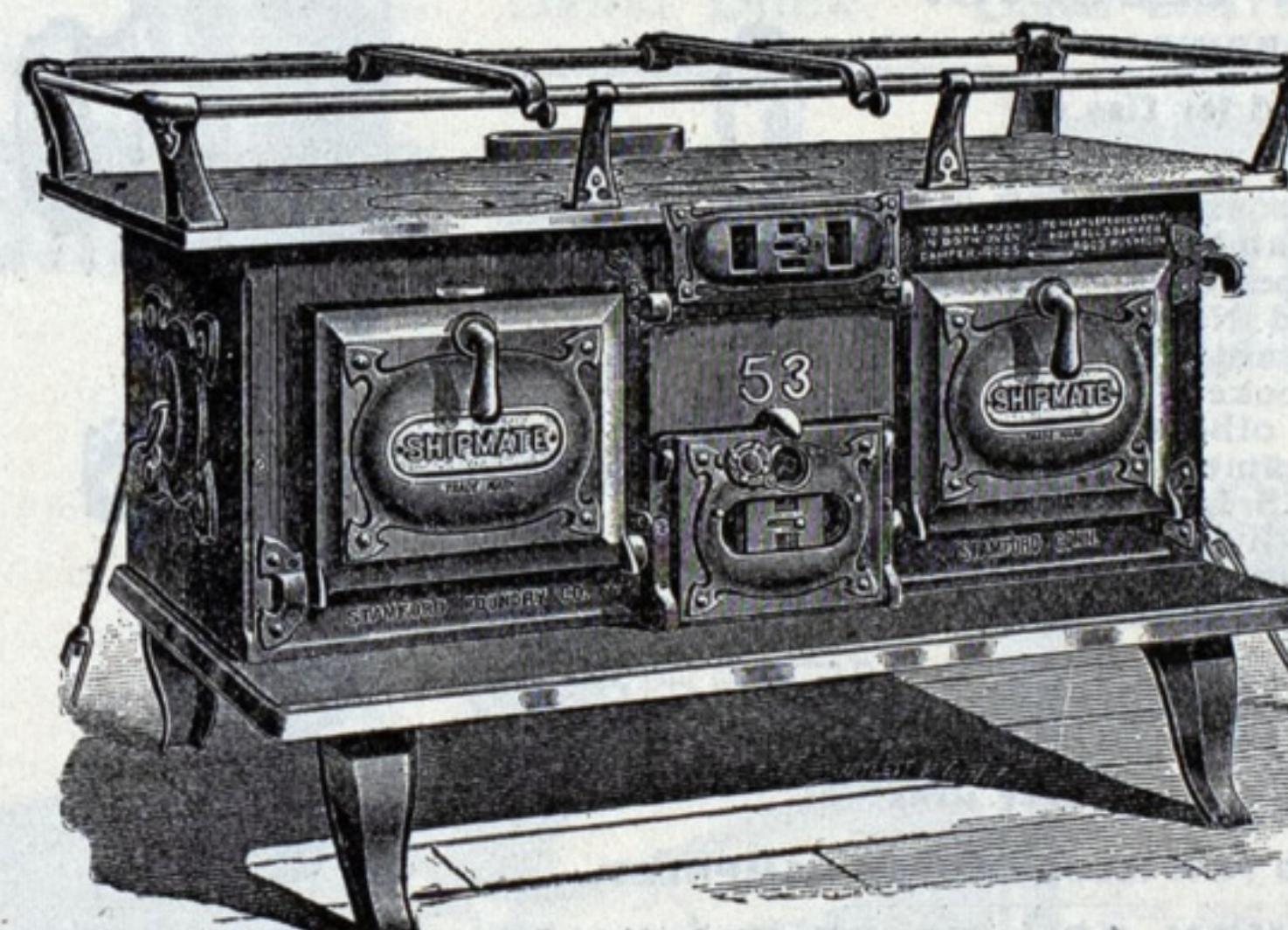
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